Drug & Cosmetic INDUSTRY

APRIL 1945

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The Drug and Cosmetic Industry is published monthly by Drug Markets, Inc., Frazer V. Sinclair, President and Treasurer; Thomas R. Farrell, Vice-president and Secretary. Publication Address, 28 Renne Ave., Pittsfield, Mass., U. S. A. Editorial and General Office, 101 West 31st St., New York, 1, N. Y., U. S. A. Business Manager, Frazer V. Sinclair; Advertising Representatives, P. W. Alexander (on leave with U. S. Army), Walter M. Brauneiss, C. R. Keeley; Production Manager, Katherine Hyde; Circulation Manager, Harry G. Kelbly.

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THOMAS R. FARRELL, Editor
ELMER SHEETS, Managing Editor
FRANCIS CHILSON, Production Editor
M. A. LESSER, Technical Editor
HARRY G. KELBLY, Market Editor
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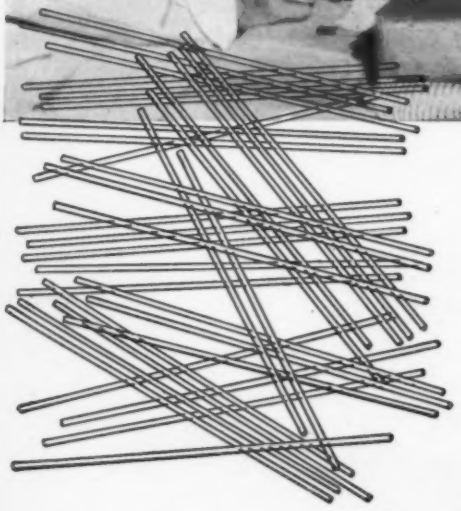

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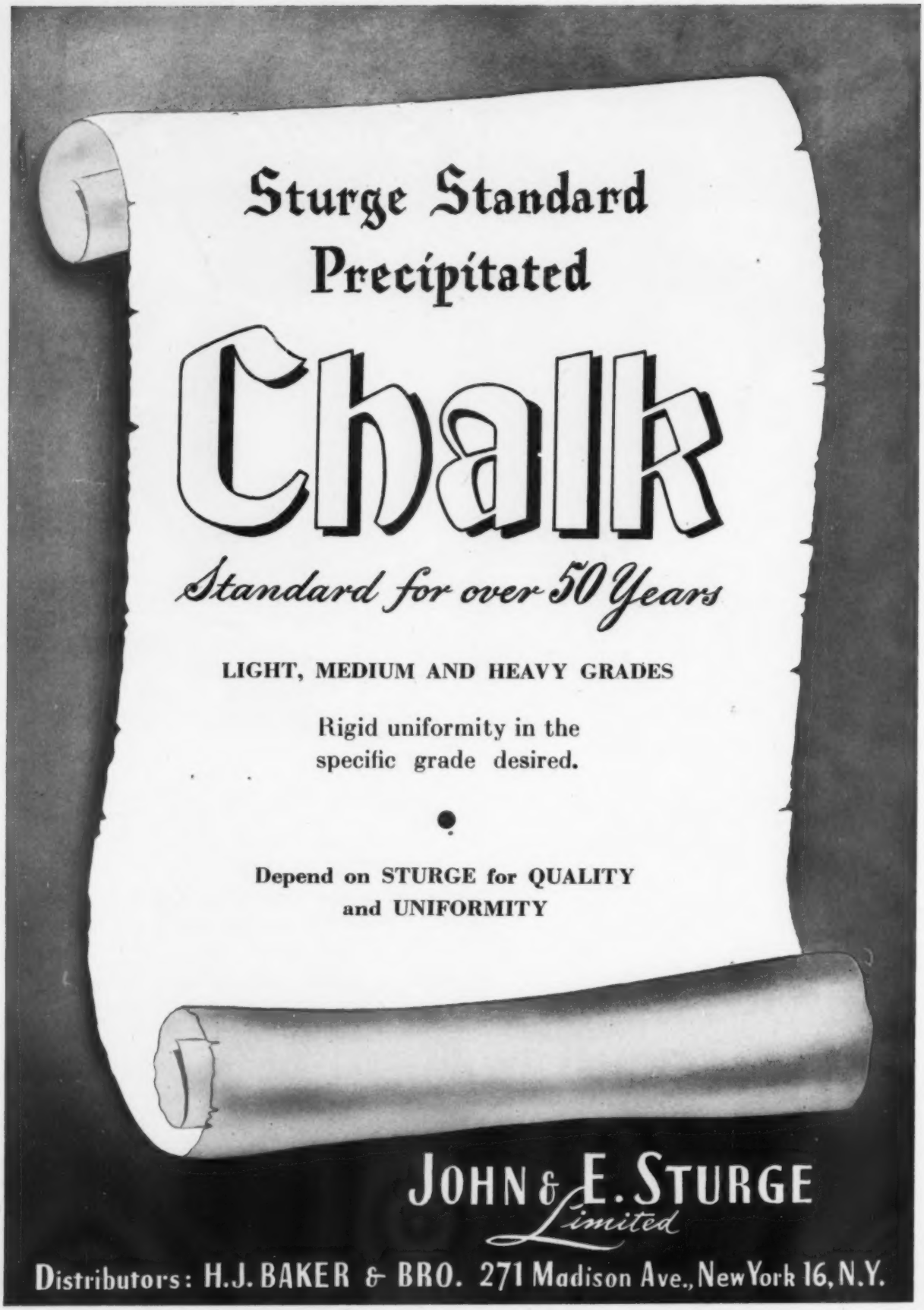
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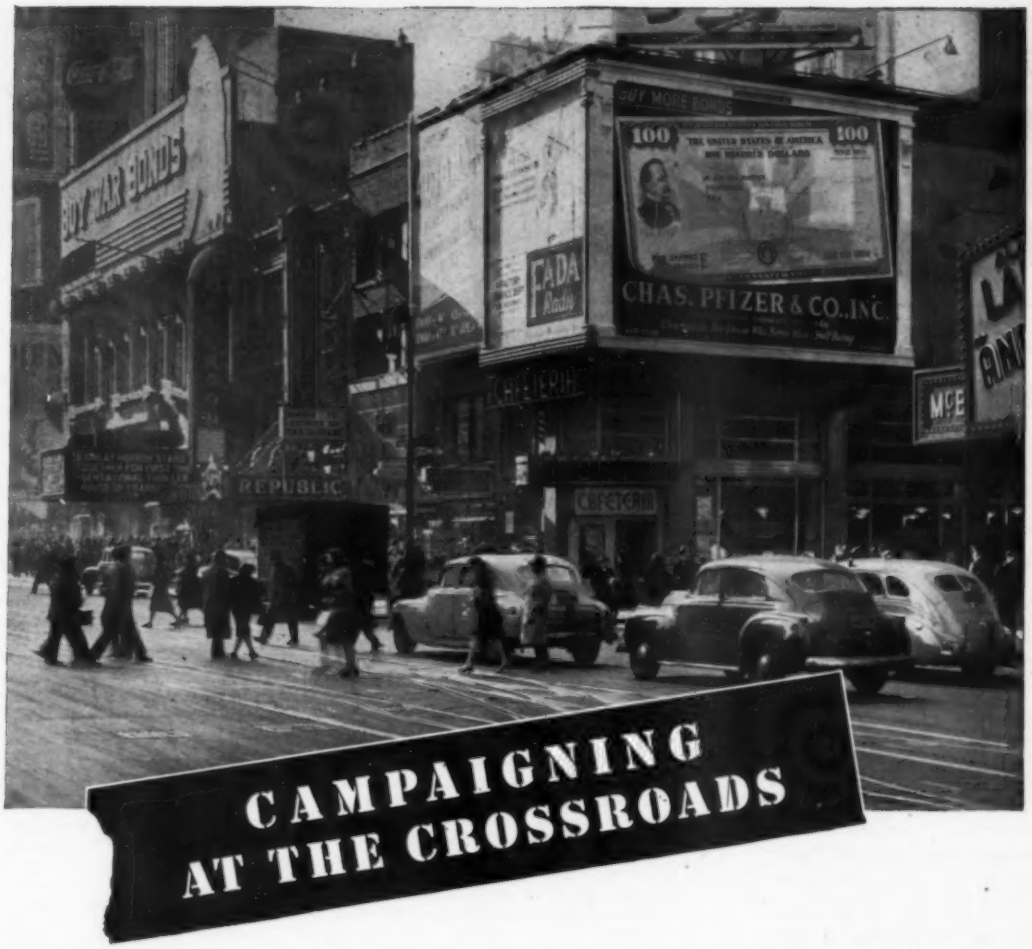

CAMPAIGNING AT THE CROSSROADS

At the "Crossroads of the World", above the throng and bustle of New York's Times Square, you'll see this outdoor sign with its war bond two stories high. Here is part of a sustained campaign to back up the men who are fighting for us in the earth's far places. It is a campaign in which Chas. Pfizer & Co. is proud to help.

At other crossroads thousands of miles west of Manhattan, sure-footed litter-bearers pass warily along narrow jungle trails. On other fronts far to the east, mud-bogged lanes lead from battalion aid station to clearing station and field hospital. In places like these, Penicillin is aiding the medical personnel of our armed forces in their service to the wounded in land, sea and air combat.

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INSIDE NEWS

APRIL PREPARED BY NATIONAL CAN CORPORATION, NEW YORK, N. Y. 1945

War's Diverse Demands Improve Tin Containers

Strange service in still stranger sections of the world is all in a war day's work for tin cans and containers. Demand for meeting never-before-encountered conditions are building up a backlog of newly learned knowledge in container-making technique. From this, peacetime packaging improvements are sure to emerge when the guns cease firing.

By placing the needs of the fighting forces foremost, National Can Corporation is recognizing a responsibility in hastening victory. Among the many special cans and containers manufactured by the Corporation to protect war equipment and food supplies are three in particular, which are of more than usual interest.

Containers for Fogproof Paste

Fogproof paste is used on lenses for gas masks, oxygen helmets, and other similar apparatus. The container for the paste is of a slip cover design, and protects its important contents well. Large quantities are continually being produced at a high rate of speed to supply the volume needed.

Containers for War Gas Detectors

In an area where skin-blistering gas can be expected, the importance of precautionary equipment cannot be over-emphasized. The presence of mustard or arsenical vesicants is established by color change in a type of war gas detector now in wide use. The container for this detector is airtight and necessitated the development of a suitable compounding material for side seam sealing. Its closure is also of a slip cover type and, as a final operatioin, is taped.

Meals Heated in Containers

Men in the field advance far beyond any field kitchen. When they do, a special alcohol container is proving invaluable—a container capable of heating a meal for five men, or six individual "C" ration meals. These are ¼ pint triple tight solid alcohol containers.

Naturally, all of these diversified wartime container demands have stimulated the work of National Can's research department, accelerated laboratory experiments, and speeded up plans for new product development. 923

Three Dimensional Effects

A patented process offers the industry a method of totally enclosing beautiful three dimensional effects in colors in such products as containers, name plates, dials, insignia, counter displays, trade marks, etc. 924

Eye Treatment

Welders suffering "flash" burns, or actinic conjunctivitis, an eye condition caused by exposure to ultra-violet rays, are being given a specially prepared formula for home care. 925

Soap for Medical Use

The medical uses of soap have been made the subject of a symposium by ten of the outstanding medical authorities on soaps and their use. The effects of soap on normal and abnormal skin are considered, and the new text also considers the effect of soap on the hair, soap in shaving, and soap in industry. 926

Sugar from Birch Tree Sap

Sugar is being extracted from the sap of birch trees in Russia. A single tree yields about 25 gallons of sap a day which is then processed by a new method developed at Sverdlovsk Research Station. 927

Cotton Pest Insecticide

A new insect powder, known as Babbini, is being produced in Peru for cotton pests. 928

New Alcohol Source

Alcohol is now being made commercially in Texas from Sotal, a native plant which grows profusely. 929

Gets the Air Out

Vacuum packing of spray dried milk adds greatly to its useful life. However, vacuum applied only for a short time removes the air from around the milk particles but leaves untouched whatever air may be entrapped within the individual pellets. It has now been demonstrated that if the dried milk is held under moderate vacuum for a longer period the entrapped air will be removed, to leave a product that is truly vacuum-packed. Ten inches absolute pressure, for 10 hours, does the trick. 930

Synthetic Blood Plasma

A method for producing synthetic blood plasma from a by-product of sugar manufacture has been developed. Unlimited production is possible. It is transported in powder form and is not dependent upon the blood group of the recipient. 931

Edible Oil

Growing sunflowers on a commercial scale for edible oil is a new enterprise in North Dakota. 932

Increases Tomato Yields

The long-standing difficulty in getting a good set of fruit from "hothouse" tomatoes appears pretty well solved. Researchers have found beta-naphthoxy acetic acid and dichlorphenoxy proponic acid markedly promotes fruiting under winter greenhouse conditions. This development is expected to make it possible for greenhouse operators to plant tomatoes earlier than in the past, obtain larger yields, and to complete the marketing of the crop by the time field-time grown tomatoes become available. Both products are economical to use. 933

Sunburn Preventive

Titanium dioxide has been found in field tests to be a most effective sun screen to prevent sunburn. 934

Tangerine Syrup

Tangerine syrup, rich in sugar and vitamins, light brown, and honeylike with a sweet, fruity taste, has been produced by the chemists of a southern citrus commission. 935

Foam in Headspace

Foam in the headspace of beer or carbonated beverage containers frequently spells difficulty, but a patent has recently been issued on a method whereby carbon dioxide foam eliminates oxygen from the headspace before sealing. Making use of the controlled evolution of carbon dioxide, a small U-tube, heated to constant temperature with hot water, is dipped into each container on the filling line in turn. The temperature difference between the beverage and the heating water, as well as the time and depth of the immersion of the U-tube, when in the proper relation to one another, will give a foam that can be depended upon to persist until the container is sealed. 936

Converting Sea Water

A solar still—available in a new pocket size—assures a continuous supply of fresh water to Army and Navy flyers forced down in tropical waters. It converts salt water into safe drinking water by harnessing the rays of the sun. By evaporation and distillation, sea water becomes fresh. 937

Leaves Rich in Protein

Vegetable leaves which are wasted in processing plants are rich in scarce protein, carotene and riboflavin. Experiments prove these waste leaves can be prepared as valuable chicken and animal meal. 938

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Flavor Tests

With the increasing recognition of a tie-up between food quality and its taste and appearance, taste test panels are becoming as necessary a part of a food plant laboratory as are balances and reagents. But the research director who would not accept a balance without a guarantee of its accuracy, and who makes great demands as to the purity of reagent chemicals, will frequently accept the opinions of the taste panel without making any inquiry as to their individual ability to distinguish flavors or to represent the choice of the market for which the product is intended.

Recent British work indicates that the panel should be made up of individuals between 15 and 40 years of age, since in childhood taste sensitivity is less and it again begins to decline after about 40. Also, the ability of the individual members to distinguish differences in flavors in the particular products to be tested must be checked because some people have a taste deficiency, or at least greatly elevated threshold of sensation, for certain substances, while showing normal perceptiveness with regard to other elements in the flavor. Others are more readily subject to taste fatigue. It is unnecessary to point out that the presence of such individuals on the panel may lead to erroneous results, because in taste testing as in any other experimental procedure, results can be no more accurate than the apparatus used to determine them. 939

Animal Fats

Citric acid helps the antioxidants that occur in natural fats, so that rancidity is prevented for a longer period of time. The Meat Inspection Division, Bureau of Animal Industry, has issued a memorandum permitting the use of citric acid as a preservative in animal fats and shortenings which contain animal fats, in a quantity not exceeding 1/100 of 1 per cent. We may soon expect to see shortening with the legend "With not more than 1/100 of 1 per cent citric acid added as a preservative" on the labels. Another advance for the technologist. 940

Cetylpyridinium Chloride

Cetylpyridinium chloride is reported to have high germicidal and bacteriostatic potency. It has been recommended, in 1:4000 concentration in a base of 18 per cent alcohol, 10 per cent glycerin, and about 70 per cent distilled water, for inhibiting the bacterial growth of the oral cavity. Another interesting application is its use in bronchial lavage in non-tuberculous infections. The procedure is to dilute a 1:5000 concentration with Bledsoe-Fisher hypertonic saline solution. Under these conditions it is said to be highly germicidal, to have a decided low surface tension action and to be non-irritating in the concentration used. 941

Technical Topics

EDIBLE OIL FROM OKRA—Okra, easily grown in the South, is reported to have an edible oil equal in value to cottenseed oil and is worth making Okra a major southern crop. Okra fiber, long and tough, has value in making cordage. The pith of the seed, as well as the fiber, may be sources of cellulose similar to peanut hulls. 942

NEW WATER DECONTAMINANT — A new water decontaminant is found in succinchlorimide, which unlike chlorine and chlorine compounds, is stable and is not counteracted by organic matter. In a dosage of one 2-grain tablet to one quart of water, very large numbers of intestinal pathogenic bacteria are killed within 5 to 10 minutes. 943

COMMON SEAWEED — Gracilaria confervoides is providing a new business for Atlantic seacoast towns. It is just a common seaweed but we need it to thicken soups, ice cream, chocolate milk; as an adhesive to clarify liquids; and in cheese, canned fish, pastries, confections, cosmetics and paint. 944

CRUDE VOLATILE OIL—The crude volatile oil obtained from the leaves and branchlets of one of the "tea trees" (Melaleuca alternifolia) is reported to possess eleven to thirteen times the germicidal power of phenol against Bacillus typhosus. It is nonpoisonous to animal life and has a pleasant odor. 945

RUBBER ADHESIVE SOLUTIONS — Rubber adhesive solutions, equal to those made with an aromatic solvent can be made with a petroleum solvent if 25 per cent of the rubber component (masticated smoked sheet) is replaced with gelled castor oil. 946

RECOMMENDED PLASTICIZERS—The dilactates of glycols containing three to six carbon atoms (diethyleneglycol, propyleneglycol, triethyleneglycol, trimethyleneglycol) are recommended as plasticizers of special merit for cellulose acetate, cellulose acetate-butyrate, cellulose acetate-propionate, and similar cellulose derivatives in lacquers. 947

PRINTERS' ROLLERS COMPOSITION —A new composition for printers' rollers consists of glycerin, magnesium chloride, potato starch, and a stabilizing additive, such as ammonium bichromate, potassium permanganate, or manganese dioxide. 948

SOLID LUBRICATING GREASE—Lubricating grease in solid form is being produced with a base of castor oil by means of a newly discovered process. 949

WASTE LEATHER PRODUCES COLORS — Colors produced from waste leather have been tested with promising results. Rich browns, bluish and black pigments have been obtained. 950

CITRUS MEDIUM FOR PENICILLIN— Developments in penicillin manufacture continue to furnish research results of value to other industries. For the surface culture method it is desirable to have a culture medium which is a solid jelly at the beginning and which later becomes a fluid. Citrus pectate pulp makes this possible. While application in penicillin manufacture is limited, the value of such a medium is not restricted to this product, and it may be found to improve the technique for other commercial microbiological processes. 951

SABADILLA SEED INSECTICIDE — Use of sabadilla seed, a species of lily, as an insecticide shows promising results. Tests were made against the most common crop-damaging insects, and in comparison with insecticides prepared from rotenone, pyrethrum or arsenicals, and in one instance, DDT. Sabadilla seed has been used as a medicinal and for the destruction of body vermin for years. 952

GERMICIDAL FLOOR FINISH—A floor finish incorporating a powerful germicide is now being manufactured which will kill typhoid and other similarly resistant disease-causing germs within five minutes of application. The finish is said to be non-toxic, is composed of wax with the germicide added in such a way that its presence is unnoticeable. 953

NEW BACTERICIDAL — Research on hitherto untested lichens indicate that they contain substances which, like penicillin, have the power to inhibit the growth of bacteria. 60 out of 118 tested species have been found to contain antibiotic substances. 954

Every effort will be made to furnish additional information on these articles. Where such information is not obtainable, we will refer inquiries to the original source of the article. Write to National Can Corporation, 110 East 42nd Street, New York City. Please mention the number at end of article—also name of the magazine you saw it in.

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Here are five Hooker Chlorides that are being widely used in Chlorination reactions. Their application is so widespread that we can only touch briefly here on a few of their uses in organic synthesis.

Sulfuryl Chloride, SO_2Cl_2, is commonly used to form organic acid chlorides. It may be used to produce chlor derivatives of phenols and in the presence of certain catalysts to produce chlor derivatives of hydrocarbons or the sulfonyl chlorides of hydrocarbons.

Thionyl Chloride, $SOCl_2$, available in a high degree of purity is a popular chlorinating agent because by-products of its reactions are sulfur dioxide and hydrogen chloride, gases readily removed by heating. It reacts with organic acids to form either acid chlorides or anhydrides depending upon ratio of acid to Thionyl Chloride.

Sulfur Dichloride, SCl_2, is used as a chlorinating agent and in these reactions may be considered the equivalent of chlorine dissolved in sulfur monochloride. It reacts with sodium salts of organic acids to produce acid anhydrides.

Sulfur Monochloride, S_2Cl_2, and ***Sulfur Dichloride,*** SCl_2, are used in metallurgy to chloridize sulfide ores. They react with unsaturated hydrocarbons introducing sulfur or chlorine, or both into the molecule. Unsaturated fatty acids are treated with these chlorides to produce cutting oil bases. They also find extensive use in the manufacture of dye intermediates, rubber substitutes, military gases, insecticides, and pharmaceuticals. Phenolic resins can be made through the use of these chlorides. The sulfur chlorides which have a ready source of chlorine are ideal chlorinating agents with the added advantages of ease of handling and storage and of low cost.

Phosgene (Carbonyl Chloride), $COCl_2$, is the acid chloride of carbonic acid. With alcohols it forms either chlorformates or carbonates. With amines it forms chloramides, substituted ureas or isocyanates. It enters into many Friedel-Crafts syntheses with aromatics to produce acid chlorides or aryl ketones. It may also act as an agent for direct chlorination. With metallic oxides and sulfides, it gives anhydrous chlorides. Reacting with organic acids it has been used to make acid chlorides and anhydrides.

Bulletin No. 328A, a technical discussion on Hooker Chlorinating Agents, gives more information on these chlorides as well as on Chlorine and Hydrogen Chloride and is available upon request. Our technical staff is also at your service in helping to solve problems involving the introduction of chlorine into organic chemicals or in the application of any of the many Hooker chemicals.

PHYSICAL DATA

	Sulfuryl Chloride	Thionyl Chloride	Sulfur Dichloride	Sulfur Monochloride	Phosgene
Formula	SO_2Cl_2	$SOCl_2$	SCl_2	S_2Cl_2	$COCl_2$
Molecular Weight	135	119	103	135	98.9
Description	Light yellow liquid	Pale yellow to red liquid	Dk. brown or reddish liquid	Yellow to slightly reddish liquid	Colorless gas or light yellow liquid under pressure
Freezing Point	Below—54°C	Below—75°C	—78°C	—80°C	—126°C
Boiling Point or Range	68° to 70°C	Technical Grade 72° to 79°C. Refined Grade 75° to 78°C	Decomposes above 40°C	138°C	8.2°C
Specific Gravity at 15.5°C	1.667±.005	1640±.003	1.638±.005	1.690±.005	1.392
Analysis	Over 99% by weight SO_2Cl_2	Technical Grade 93.0% by wt. $SOCl_2$ Refined Grade 96.0% by wt. $SOCl_2$	Minimum Cl_2 by wt. 66%	Minimum Cl_2 by wt. 50%	Shows no free Cl_2 when bubbled for one min. through 0.1% K.I. Solution

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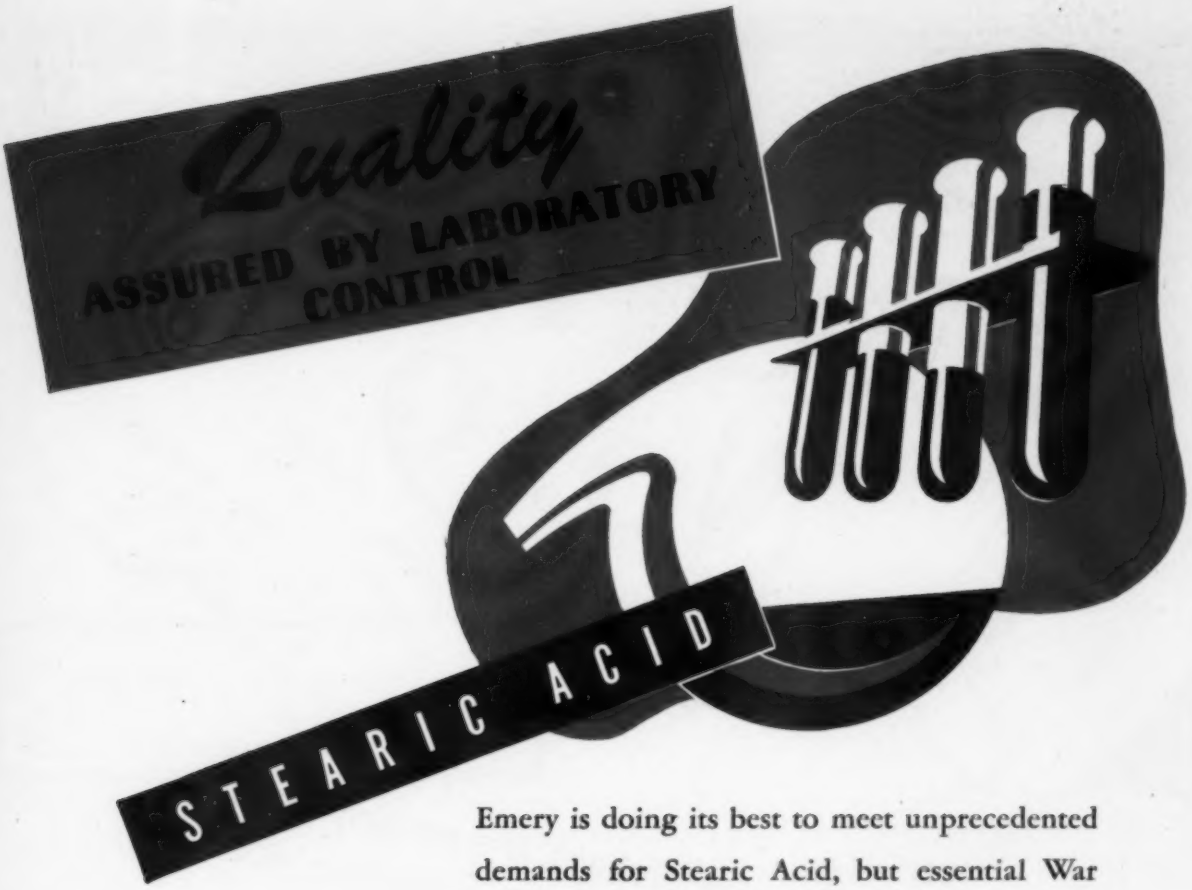

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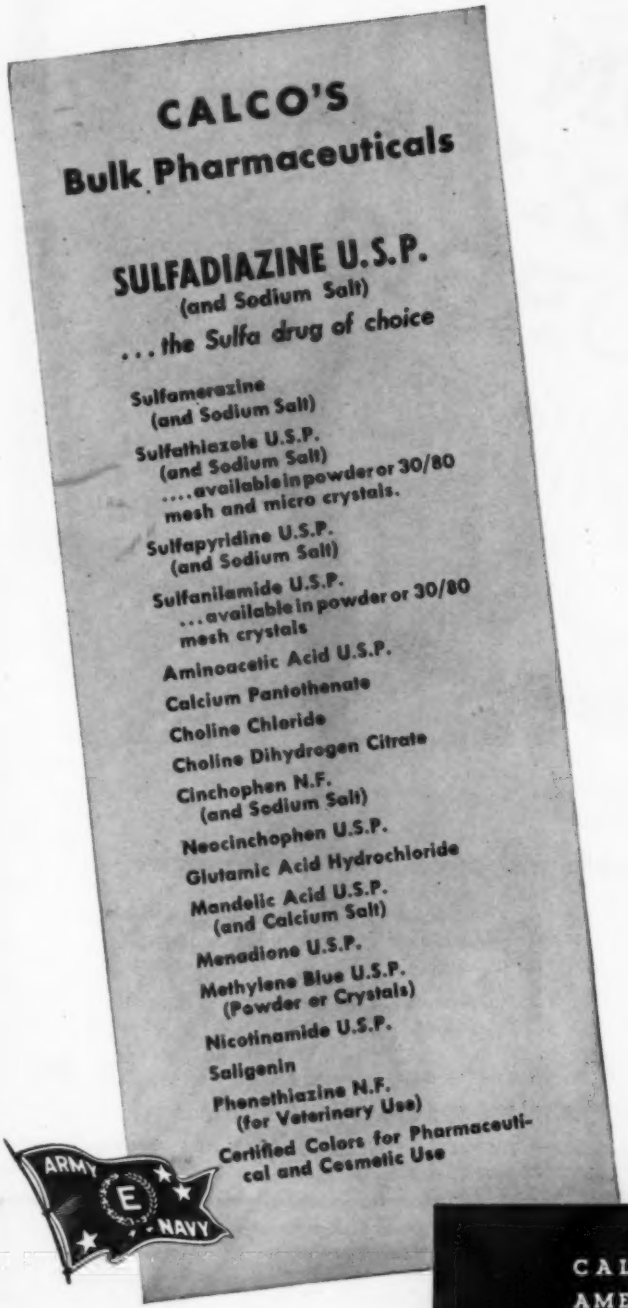

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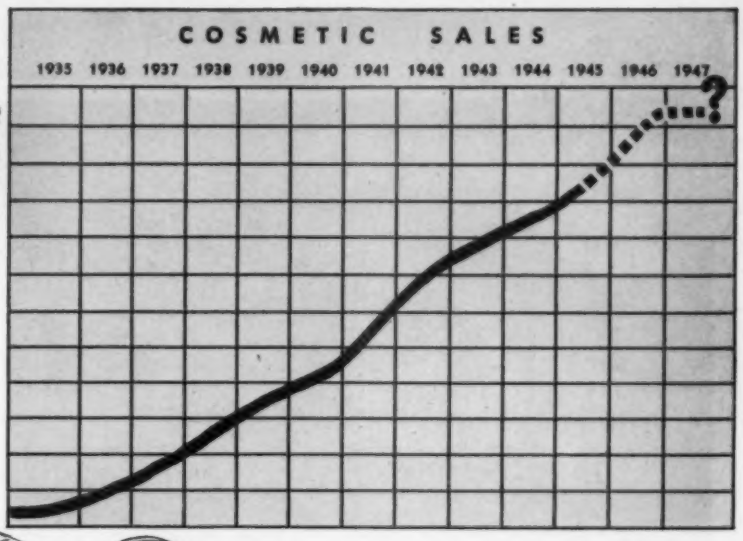
What About.... Postwar Cosmetic Sales?



Cleopatra knew the answers!

● If she were here today, Cleopatra would tell you: "Don't worry—for to Women, 'How do I look?' will always be a more vital question than, 'When do we eat?' —and those whose cosmetics give her the most flattering answers will never lack for customers."

Cleopatra was right—color and scent appeal artfully linked with imaginative packaging will sell cosmetics in 1950 A.D. as they did in 50 B.C.—But "What will it DO for me?" will remain the most important question in determining whether *your* cosmetics will continue to earn women's favor after the war.

Kolmar does not market any brands under its own name and to sell as they have, Kolmar's cosmetics have to be good—now—and all the time.

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BY SUCH artifice did the beauties of another day contrive to heighten their allure. The illusion of a healthy, clear skin was induced by contrast with the little black "beauty patch!"

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Tomorrow promises great improvements in the art of the cosmetician as wartime developments in many fields become available to our industry. We, at Allied, are ever alert to adapt new ingredients and processes to product improvement when their merits have been demonstrated. Our experiences and findings are available for discussion (in relation to YOUR postwar plans.) Drop in to see us, or, on invitation, we will be happy to call upon you. Appointments may be made at the Allied Office in the R. C. A. Building, Radio City, New York.

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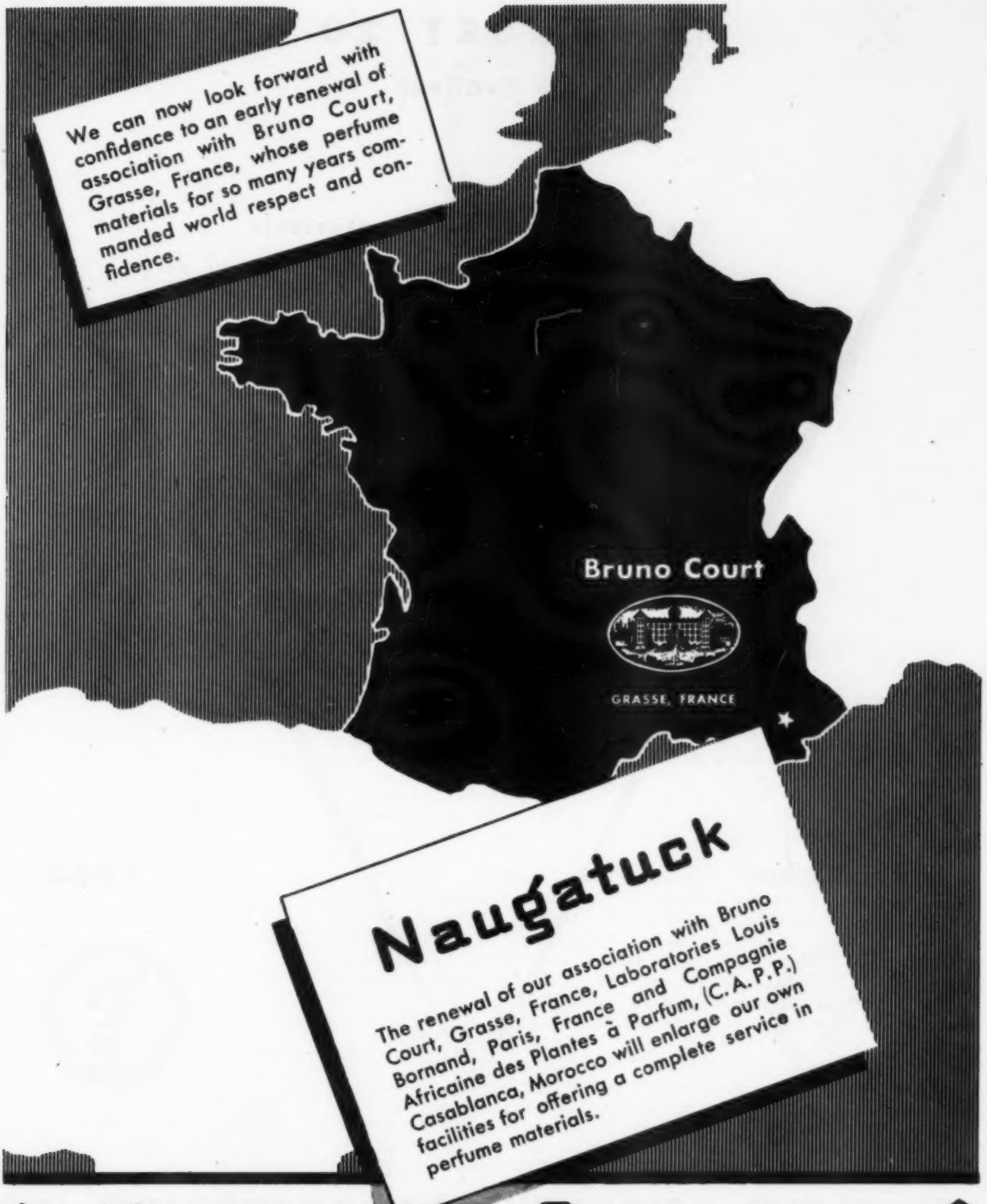
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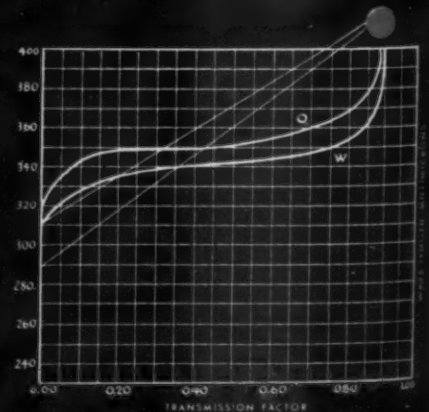

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Penicillin Sodium Merck meets the recognized high standard of quality established for all products bearing the Merck label.

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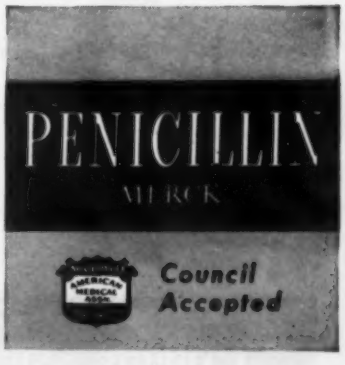

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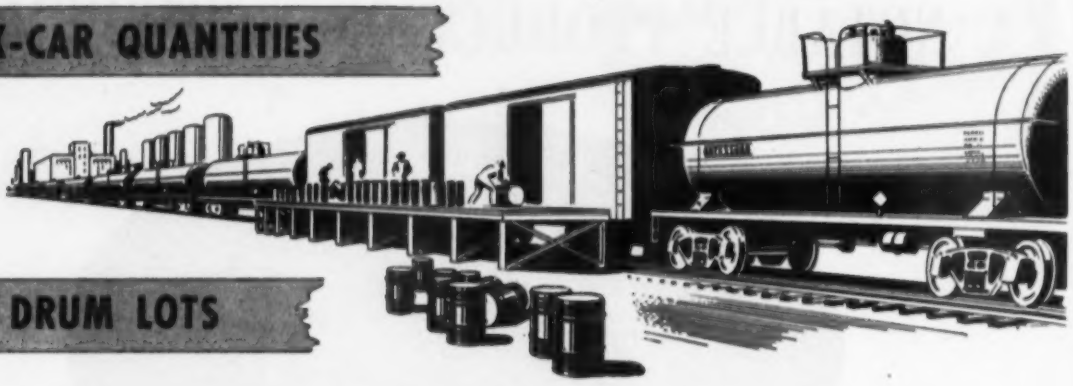

AND DRUM LOTS

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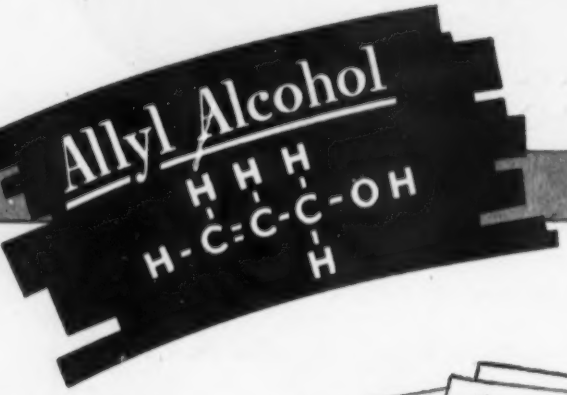

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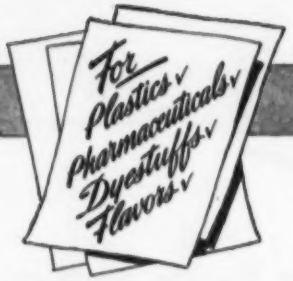
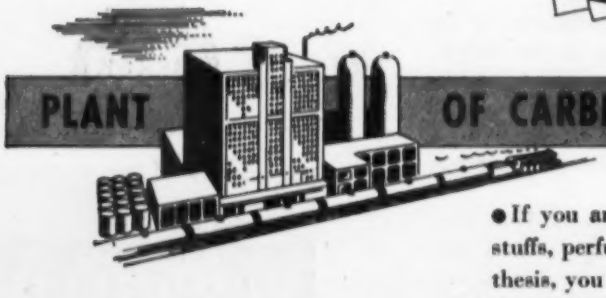


FROM A NEW



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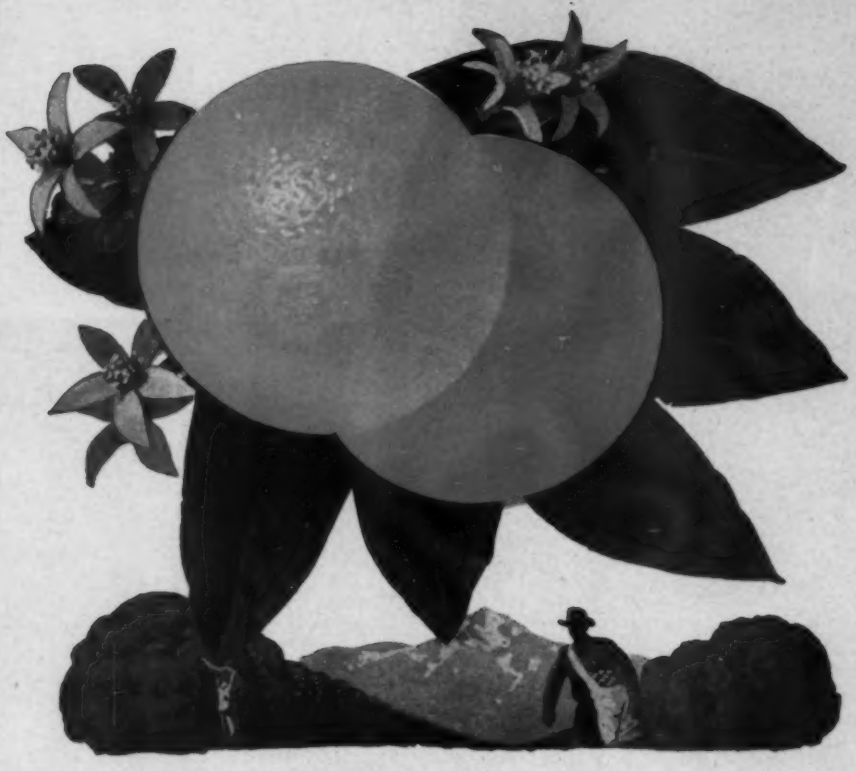

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First in America for Orange Flavor

Give it all your tests for *quality*, *uniformity*, and *strength*. The results speak for themselves! You'll find Exchange Oil of Orange puts more *real orange flavor* in your products than any other orange oil.

Because it's made only of fruit from the "Sunkist" groves of California... in the largest orange products plant in the world... accepted and reordered by men and women who know orange flavor.

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180 Varick Street, New York, N. Y.

Distributors for

CALIFORNIA FRUIT GROWERS EXCHANGE

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Givaudan's long experience in the creation and development of countless perfume bases, odors and aromatic materials has provided a deep, broad reservoir of knowledge from which new ideas in perfume and cosmetics are constantly rising. During the war, Givaudan customers are benefiting by the creative help our staff is giving in adapting available materials to special demands. After the war, when traditional materials return and the range of opportunity for improvement increases, Givaudan will be ready with new experience to aid in the development of improved lines.

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For 145 years and more, D & O has produced Aromatics and Essential Oils of the very best quality...and our many years of research have equipped us with definite "know-how".

To pass along to you the benefit of our accumulated experience and knowledge has been, and always will be, a pleasure!

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COME, COME, SISTER! Don't be so persnickety. There's nothing a mink coat and a couple of orchids won't cure — and you're well on your way to having them. Because that man of yours is going places.

Druggists who diligently pore over the *Blue Price Book* give the kind of service that leads to owning the biggest and best drug store in town.

And advertisers who use space in the *Blue Price Book* find it helps move their products *into* and *out of* those same busy, profitable stores.

If advertising in the *Blue Price Book* is a new thought to you, why not ask the nearest American Druggist office for information and rates?

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CHICAGO: 326 W. Madison Avenue
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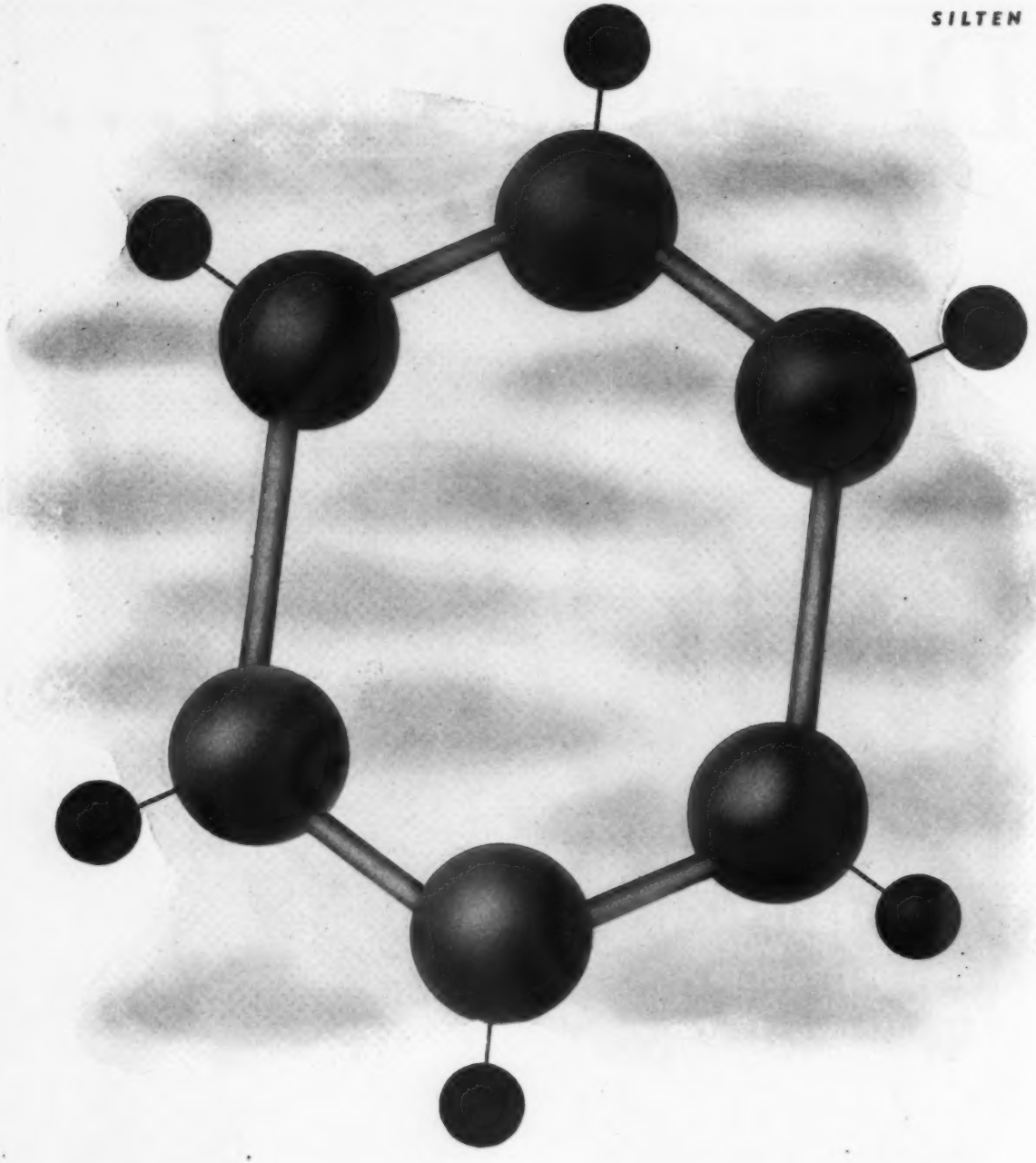

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Durlin's laboratory and factory have been busy with war work and in giving every possible help to *Durlin* customers. But we have never lost sight of the great opportunities that new technical developments will open for cosmetic manufacturers in *Nail Enamel.*

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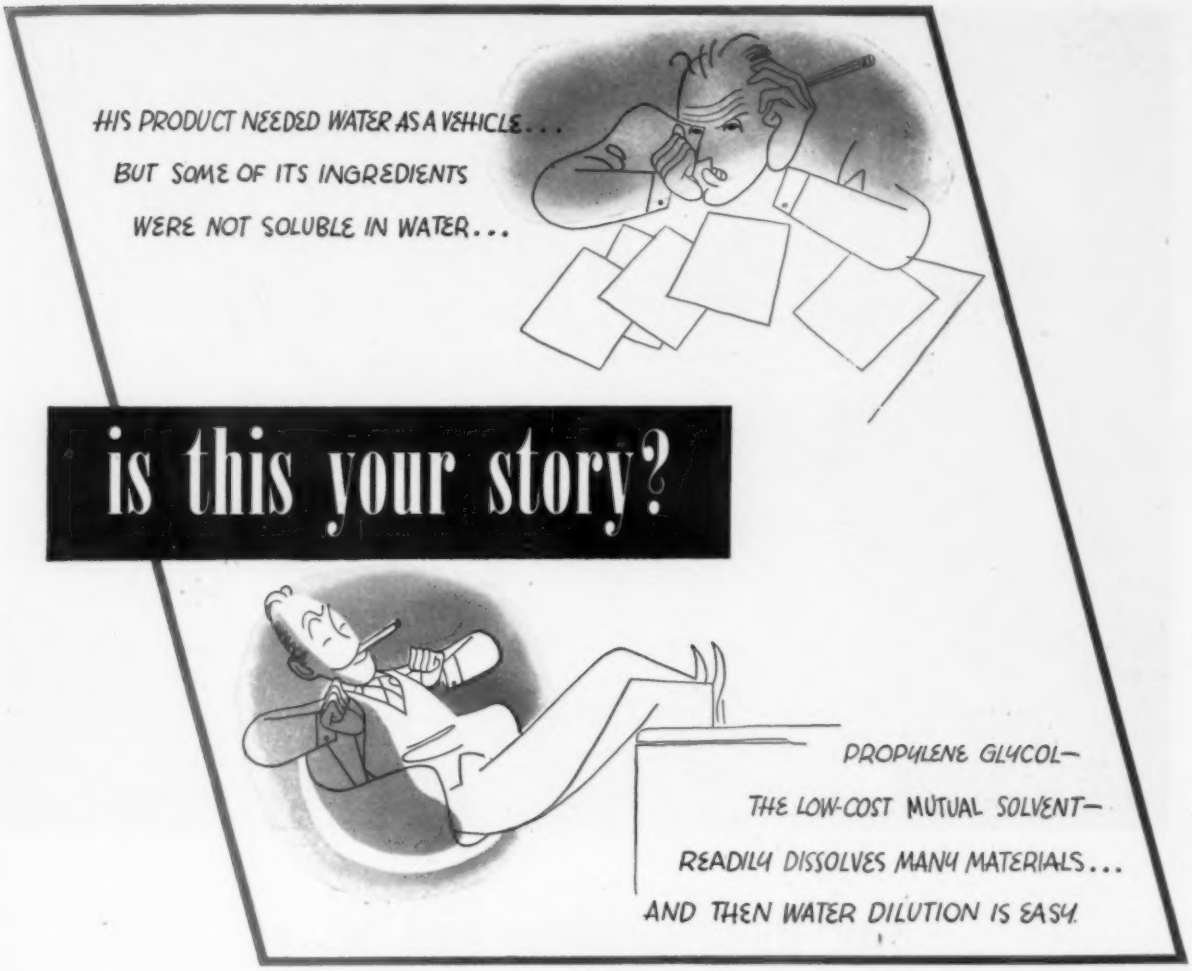
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BUT SOME OF ITS INGREDIENTS
WERE NOT SOLUBLE IN WATER...
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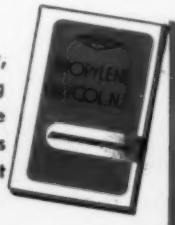
PROPYLENE GLYCOL—
THE LOW-COST MUTUAL SOLVENT—
READILY DISSOLVES MANY MATERIALS...
AND THEN WATER DILUTION IS EASY.

Here are the facts of a tough case. **PROBLEM:** How could water serve as the vehicle . . . when some of the other ingredients just wouldn't dissolve in water? **ANSWER:** (it proved simple and economical) Dow Propylene Glycol, N. F., first dissolved those stubborn materials . . . brought them into a solution that mixed easily with water in the desired proportion.

When water-insoluble flavors, pharmaceuticals, or oils complicate your process, Propylene Glycol may be the product for you. It's low in cost, permitted for internal use, and an excellent mutual solvent for many substances and water.

Dow Propylene Glycol, of National Formulary quality, does other jobs, too . . . checks mold growth, retards drying out, improves physical properties, acts as an antifreeze. See what this multi-purpose material can do to cut your costs and improve your product. Send for Dow's free booklet today!

Dow Propylene Glycol, n.f.



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The Moon-Goddess and Silver

BECAUSE of the shining appearance of silver, the alchemists named it "luna"—after Luna, the moon-goddess of ancient Rome.

Early in the sixteenth century, Paracelsus, accepting the ancient belief that insanity (lunacy) was due to the influence of the moon, prescribed silver therapy in the treatment of nervous disorders. This idea survived until the late nineteenth century, when silver nitrate (lunar caustic) was still employed in the treatment of epilepsy!

Although no longer prescribed for insanity, silver nitrate is still the most important silver compound in use today. From it, nearly all other silver compounds are directly or indirectly prepared.

For over 78 years, MALLINCKRODT has pioneered in the development and production of silver compounds for use in medicine and industry. Whatever your requirements, specify MALLINCKRODT Silver Chloride, Cyanide, Iodide, Nitrate, Oxide, Protein (Mild & Strong), Lunar Caustic, etc.

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"He says penicillin cures a certain disease too quickly."

KEEPING POSTED

Ethical Medicines and the Public

THE *New Yorker* went to town on the trend to ethical medication in its March 31 issue as follows:

"The little leaflets that come wrapped around bottles of medicine are getting more and more technical, we notice, possibly to keep up with the smattering of science the populace gets from the Sunday supplements, the picture magazines, and the subway-car ads. The other day we opened a bottle of nose drops and turned to the sheet of directions, which began:

" 'Privine Hydrochloride is an isotonic, buffered aqueous solution of naphazoline (naphthyl-methyl-imidazoline hydrochloride), a potent synthetic vasoconstrictor. It possesses the chief pharmacological properties of epinephrine on peripheral vessels; however, Privine's activity is markedly prolonged.'

"We never felt more confidence in anything in our life, and inside half an hour the congestive swelling of our nasal mucous membrane had gone down, the obstruction to the openings into our accessory spaces, or sinuses, had disappeared, our nasal peripheral vessels had been synthetically vasoconstricted (without detriment to ciliary activity and with the alkalinity of pathological secretion resisted), and our cold had gone. A generation ago, we suspect, the same preparation would have been called Captain Henry's Patent Cold-Cure: For Young and Old, and it wouldn't have done us a bit of good."

Knowledge of Longevity

"WHAT We Know About Longevity" is the title of an article by Dr. Theodore G. Klumpp, president of Winthrop Chemical Company, appearing in the April issue of the *American Mercury*. Dr. Klumpp discusses the usual things that are generally thought to shorten or lengthen life such as alcohol, smoking, vegetarianism, exercise, hypothyroidism and hyperthyroidism, and other things with the observation that opinion is divided on these subjects and nothing definite has been proven. The only thing that appears to be proven, according to Dr. Klumpp, is that "overweight is a factor that is highly prejudicial to long life." Blood vessel deterioration is the main killer with more than 5,000 deaths per 100,000 population, against 120 per 100,000 for cancer which is runner up.

Alcohol Outlook Still Poor

THE alcohol situation has not improved, but rather it appears to be getting worse that it was. The opinion is expressed that the matter of alcohol supplies has been badly messed up at Washington and that the holiday for production of beverage spirits during the month of January never should have been granted. Just why rosy figures showing an apparent surplus for this year of some 78,000,000 gallons were published and the holiday allowed because the stockpile of alcohol was predicted to rise above the limits of storage capacity is not explained. However, the fact remains that when the new year opened up, alcohol supplies in sight not only did not indicate a surplus, but actually indicated supplies that left far less for civilian uses than was the case during last year. Now civilian supply must suffer because another liquor holiday has been granted and netral spirits for probably a year and one-half or two years supply of alcoholic beverage are available.

No specific allocations were made for toiletries and cosmetics, oral antiseptics, rubbing alcohol compounds, but specific amounts were released to alcohol suppliers to be distributed by them to the users. This seems to be just a method of the WPB refusing to bother with the detail, or assume the responsibility for direct allocation to users and shifting this work and this responsibility to the alcohol supplier. For the above mentioned uses the WPB released for March approximately 90 per cent of the amount of alcohol released for February, and this probably indicates the trend. In other words there is an excellent chance of alcohol supplies for this year being less than last year, but there is much less of a chance of the supplies being greater than they were last year. Incidentally the liquor holiday for January netted the liquor industry 59,000,000 proof gallons.

Penicillin Marketing

ONE of the great difficulties that faces the penicillin producers and distributors is that of prices. The unsettled conditions which obtained in this direction when the drug first became available to civilians in a large way remained unsettled even after two price cuts were made. The real difficulty

lies in the fact that this drug is produced by firms who are different in the primary products which they manufacture, and who are different in the branches of trade to which they distribute their primary products. Also it is well known that pharmaceutical manufacturers themselves have long had sales and distribution policies which are at great variance with one another. As examples, one pharmaceutical manufacturer sells his products only to service wholesalers and to no one else; another pharmaceutical manufacturer has only one price for each of his many items, the wholesaler only getting a discount by buying in larger lots, although any retailer can obtain the same discount by buying in the same size lots. Other pharmaceutical manufacturers have varying policies which give discounts to wholesalers, retailers, hospitals, and doctors, and amounts of these discounts are apt to vary according to the manufacturer. At the present time many sellers of penicillin are of the opinion that variations in prices do not matter too much as they feel that supplies available are limited and will all be consumed no matter what the price might be. However, when supplies are increased for civilian use, as they will be from month to month, the prices quoted will become of increasing importance and then the sellers will have to take steps to place themselves in a favorable competitive position as penicillin is, and will continue to be a prestige item which no leading pharmaceutical manufacturer can afford not to sell under his own label. Penicillin prices are certain to decline in the future as production increases and costs decline still further. However, eventually there is certain to be competition from the viewpoint of quality as production becomes more than ample for all uses and time, labor, and facilities are available to enable manufacturers to further purify the product which is now only sixty per cent pure. The future of penicillin appears very bright for the reasons that huge potential demand awaits only the production of sufficient material to allow its use in tablets, capsules, ointments and other forms of local application, as well as in the vast field of animal husbandry.

Winthrop Chemical Stock Sale

THE fifty per cent of the stock of Winthrop Chemical Company owned by the General Aniline & Film Corporation is being sold at auction by the Alien Property Custodian who is owner of 98 per cent of the General Aniline stock seized from German owners. The offering amounts to 6,150 shares of class B common stock, the other fifty per cent of the stock of the company, amounting to 6,150 shares of class A common stock, now being owned by Sterling Drug, Inc. Sterling Drug offered $9,500,000 for the stock prior to the announcement of the sale, so this became the upset price. The class A stock held by Winthrop gives the holder the right to name two directors, while the class B stock offered at auction gives the holder the right to name only one director. For this reason, and for the reason that Sterling owns the other half of the company, it is difficult to see why anyone other than Sterling would want the stock. At the rate of Sterling's bid, the total value of Winthrop would be somewhere in the vicinity of $19,000,000.

Shipping Cartons Very Tight

THE shipping carton situation has become very acute with the glass bottle manufacturers unable to make shipments in some instances because of the shortages of cases. The five per cent cut in shipping container use recently ordered by WPB has not helped the situation materially. Some manufacturers have been able to overcome the restrictive effect of the five per cent cut by increasing the size of their shipping containers from four dozen to six dozen. This is done by using a higher carton which holds three layers of two dozen each instead of two layers of two dozen each. This saves the equivalent of one bottom or top per carton, and we are told that this amounts to five per cent. Some manufacturers have taken this step, while others refuse to do so. Some one who seemed to us to be in a position to know told us that many of the food people went hog wild last year paying no attention to their quotas established under the WPB order relating to restriction of glass containers. He said he knew of one man who packed in 1944 more than twice as much of a certain item as he had packed in his base year of 1942. He said there were other flagrant violations among food products but that nothing had been done about it.

No Coconut Oil Soon

THOSE who are expecting coconut oil shipments from the Philippines now that these islands have been retaken, are doomed to wait a long time, we are told. Our information is to the effect that during the Japanese occupation of the Islands, the plants for the expression of coconut oil were dismantled and used for scrap iron to fight the war. This means that these plants will have to be rebuilt and reequipped before coconut oil can be produced in the Philippines and this will certainly take a long time. The shipping of the nuts to this country for expression of the oil here is probably out of the question not only because of the large bulk of the shipments, but also because equipment and manpower are probably not available here to do the job.

Drugs and Medical Practice

THE progress of therapy is clearly indicated by a recent listing of the ten most important drugs in the *Journal of the American Medical Association.* The Journal points out that in 1910—before the discovery of such important things as penicillin, the sulfa drugs, the barbiturates, blood transfusions and plasma, insulin and other hormones, and vitamins, a survey of doctors resulted in the following list: 1. ether, 2. morphine, 3. digitalis, 4. diphtheria antitoxin, 5. smallpox vaccine, 6. iron, 7. quinine, 8. iodine, 9. alcohol, 10. mercury.

A list compiled from a canvas of professors of medicine in leading medical schools of the country to determine the ten most important drugs of 1945 gives the following list: 1. Penicillin, the sulfonamides, and antibiotics; 2. Whole blood, blood plasma, and blood derivatives; 3. Quinine and quinacrine; 4. Ether and other anesthetics, morphine, cocaine, and barbiturates; 5. Digitalis; 6. Arsphenamines; 7. Immunizing agents, specific antitoxins, and vaccines; 8. Insulin and liver extract; 9. Other hormones; 10. Vitamins.

Perhaps the most significant difference between the list of 1910 and the list of 1945 is that all of

the items in the earlier list are individual products, while the list of 1945 contains relatively few individual items, the greater part of the list being made up of groups of related products. Therefore the list of 1945 really includes many times ten items, while the list of 1910 included only ten individual items.

Another significant thing about the 1945 list is that practically none of the items given can be used for self-medication with the exception of vitamins, —and the doctors deny that even these products should be used in this way. This gives a clear indication of the fact that medicine as it is practiced today and will be practiced in the future relies upon pharmaceuticals and other preparations which are administered either directly by the physician or a nurse, or which are sold to the patient only on a written prescription. Therefore, while we have come a long way from the late twenties, when drugs were pretty much held in disrepute, to the present era, which might be described as the golden age of therapeutics, we have arrived there largely because there have been discovered products with which the physicians can obtain specific results, and preparations which the physicians will use freely because the doctors know that the layman cannot use these products for self-medication.

All of this merely confirms the trend of the drug manufacturing industry to ethical preparations. It means that the prescription phase of the drug store business will continue to grow and also that the hospitals, which are on the increase, and the doctors will increase their purchases of therapeutical preparations perhaps to the disadvantage of the drug store.

But the trend toward the type of preparation which can be given by the doctor or the nurse only, or which can be obtained only on the prescription of a physician tends to build up the demand for socialized medicine. The fact that penicillin cures gonorrhea, is causing it to be offered free in the State of Louisiana in the same manner as the arsenicals have long been offered free for the control of syphilis. Free distribution and administration of drugs for venereal diseases, together with the fact that a person must consult a doctor every time he wants administration of, or a prescription for the newer therapeutic agents will cause people to wonder why the increased cost of medical treatment should not be borne by the Government. Therefore, while the physicians might be pleased with the present trend in therapeutics because it makes people more dependent upon doctors, there is a grave possibility that this trend possesses dangers for the future of the medical profession.

Waxes to be Short

PETROLEUM waxes and other waxes are going to be very short according to our information. The Government is said to want 60 per cent of the production. Government uses are said to be for waterproof tents for soldiers who are to be in China and for candles for liberated countries which are without power and light. Also we understand that the milk companies are putting up a strong fight for waxes for coating paper milk containers. They claim that milk containers, because of tl.eir lighter weight compared with glass, save gasoline and tires in deliveries. Where cosmetic creams will come off in this scramble for available supplies is anybody's guess.

Fair Trade Laws Not Imperiled

THE recent U. S. Supreme Court decision upholding anti-trust convictions against seven major whiskey distillers and 700 wholesalers and retailers charged with conspiring to fix prices in the State of Colorado, does not mean that the Fair Trade Act of that state is invalid. It is well known that under the Fair Trade Acts of the various states, producers of branded merchandise are allowed to fix the prices at which their goods can be sold at wholesale or retail. However, there never has been any right under the law for manufacturers, wholesalers, and/or retailers to join together to fix prices, which is the condition which was condemned in the recent decision. The Fair Trade Acts are just as valid as they ever were, and manufacturers still have the right to control the prices at which their goods are resold at wholesale and retail in any of the states that have Fair Trade Acts.

Soviet Soaps and Cosmetics

THE Soviet Union is providing soaps and cosmetics for its servicemen from Svoboda, the oldest maker of perfumes in Russia. Since the outbreak of the war, this factory has been supplying special items such as a small kit for submarine crews containing mouth wash, tooth paste, soap, skin lotion, and eau de Cologne. The special soap is said to last four times as long as an ordinary cake and the tooth paste is also concentrated. The Army is supplied with a shaving soap that lathers in little water and acts as a disinfectant. For the Navy, there is a soap that lathers even in salt water. Fifteen kinds of soap are made for infantrymen, tankmen, and the air force, and 18 varieties of vanishing and cold creams are produced. Special types of soap are made for infants and children, and the plant manufactures its own tubes, boxes, and jars for packaging.

Supplies from France

SHIPMENT of material from France to this country has started and should be greatly accelerated in the near future. Several thousand cases of Hennessy and Martell cognac as well as Caron perfume have been accomplished. Besides the inability of obtaining shipping space, the French have been faced with the difficulty of transporting goods to their ports for loading on ships.

The scarcity of ships is now being relieved under a recent agreement between the War Shipping Administration and the French Government which approved an appeal of the French Government for the assignment of a number of ships to be operated with French crews under the French flag and the direct allocation of cargo space on other ships to the French Government for the importation into France of essential supplies into France. No definite number of ships has been agreed upon as this will depend upon the number of French crews available. This arrangement parallels those made with other seagoing United Nations. Title in the vessels remains vested in the United States. WSA also announces that it has been turning back to the French Government French ships operated up to now by WSA and that these will be operated with French crews. Cargo space allocated to the French Government is equivalent to 26 ships moving from North America to France with supplies.

Still Less Collapsible Tubes

THE collapsible tube situation is on a month to month basis as WPB allocates a certain amount of lead each month for the production of tubes. WPB set aside 370 tons for tube production during the month of April, but it appears that 25 per cent less tubes will be available for tooth paste than in the recent order. Furthermore, the tube user is limited to a percentage of former usage of tubes no matter what metal his tubes are now made of. This means that no relief from the pressure will be obtained by swinging to aluminum tubes. This inclusion of aluminum tubes in the quota is probably due to the fact that a great many manufacturers using tubes would swing to aluminum and there is not enough aluminum tube capacity to supply all who would want them. Therefore, these tubes are to be reserved to a large extent for essential products and are not being thrown open to all comers.

Menthol Market Declining

MENTHOL has been declining in price due to the fact that Brazilian supplies have been increased to a point at which the market has swung into the hands of the buyers rather than the sellers. What the future holds appears to be uncertain to some extent but it appears quite definite that further declines are in sight. It is the same old story that has happened in natural commodities the world over ever since trading began. Caught short of menthol when Japan was cut off, consumers in this country would pay almost any price to get supplies. Brazil found that she could produce menthol and obtain extremely high favorable prices by shipping it to this country. Business was so profitable last year that the Brazilian producers planted about three times as much mint for this year as they planted for last year. Consequently menthol supplies are multiplied, demand remains about the same, so prices must decline.

Quinine from Latin America

U. S. DEPARTMENT of Agriculture botanists searching the Andean uplands for quinine yielding trees have uncovered some surprising information. One discovery was that the cinchona tree does not have a monopoly on quinine yield. Bark of a small tree species known as *Remejia pedunculata* was found to yield up to 3 per cent of practically pure quinine sulfate. This species is abundantly distributed in the eastern range of the Colombian Andes and its foothills. Another find of major importance was that a supposedly rare species, *Cinchona pitayensis*, is really abundant in both southern Colombia and Ecuador. The bark of this species also yields 3 per cent of quinine sulfate in addition to other alkaloids of possible drug value.

A considerable number of races or strains of the "standard" cinchona tree *C. officinalis*, were found in both Colombia and Ecuador. Most of them were low-yielding, but certain local races turned out to be "surprisingly rich" in quinine and other alkaloids. Most of the quinine-yielding bark obtained during the last two years was brought out of Colombia and Ecuador. The best hunting-grounds used to be Bolivia and Peru, but over-collection has wiped out some of the best cinchona stands in Bolivia, and the remaining sources in Peru are so inaccessible that it was not economical to send collecting parties to them.

Labor Relations Good at Mallinckrodt

THAT labor relations are completely harmonious is the decision of Trial Examiner R. N. Denham, of the National Labor Relations Board, when he recently dismissed a complaint brought against the company by the American Federation of Labor. The A. F. of L. charged that the company had initiated, formed and sponsored The Independent Union of Chemical Plant Workers, an unaffiliated union, and that the company had continuously dominated and interfered with the administration of the union, and had contributed financial and other support to it. Mr. Denham, after an exhaustive hearing, decided that the company had not violated the Wagner Labor Relations Act, and that the union is a labor organization within the meaning of the act.

The report showed that the union had been organized spontaneously by Mallinckrodt employees who wanted to steer clear of being affiliated with either the A. F. of L. or the C. I. O. for fear such affiliation would cause strife at the plant. President A. C. Boyleston, vice-president W. N. Stull, Plant Manager N. P. Knowlton, and Personnel Manager E. Ehrhardt were reported to have taken a sympathetic, but aloof attitude toward the organization of an employees union. The union was found to have obtained a considerable number of employee benefits among which are time and one-half for overtime beyond eight hours, increased pay for night shift, Memorial Day as a paid holiday, and continuance of existing vacation, relief, retirement income, life insurance, and other benefits.

Amino Acid for Tooth Decay

ALTHOUGH organized medicine is warning against undue exploitation of the amino acids, stating that while they are very important in nutrition and undoubtedly will assume a place of importance in therapeutics, they should not be used indiscriminately as the vitamins have been, it seems that it is going to be very difficult to hold widespread use of the amino acids down. As an example of what we mean we cite a report by Mrs. Naomi C. Turner of Radcliffe College who says: "The essential amino acid tryptophane has distinct promise as a preventative for dental caries." The background of this statement is that tryptophane slows down the rate of starch decomposition, and Mrs. Turner has found a correlation between starch decomposition by the saliva and the amount of caries in the mouth. Persons with 20 or more cavities produce saliva which decomposes, or hydrolizes, starch very rapidly.

Mrs. Turner has tried the effect of doses of tryptophane in one person, and within a week, the time required for starch decomposition by this person had increased from 20 minutes to 240 minutes. If the results of this study prove that dental caries can be prevented by the use of tryptophane, people will start swallowing tryptophane, using in their tooth pastes, mouth washes and other preparations whether the doctors like it or not.

Indiscriminate use of sulfonamides will probably be guarded against to a still greater degree. In New York City the Board of Health has restricted all sulfa preparations to prescriptions with the exception of nose drops and bandages. Now

the proposal is made by the New York City Board of Health to discontinue free sale of these two items as well. If bandages containing sulfa drugs are restricted to prescription they will be discontinued entirely for the simple reason if such treatment is prescribed or given by a physician, the sulfa drug itself will merely be dusted on the wound before the bandage is applied. Restricted sale of sulfa nose drops would likewise probably mean a discontinuance of ready-packaged preparations of this kind.

The FTC and the Facts

THE Federal Trade Commission has ideas that might not be generally believed to agree with the facts. As an example, in a number of recent stipulations and cease and desist orders recently issued the Commission has stated that the *average* American diet contains sufficient minerals and vitamins since, it is contended, average crops are not grown on barren land. What constitutes "barren land" is not stated. Certainly land can be barren of some minerals and not of others. It is well known that there are certain sections of the country known as "goiter belts" where there is a very definite shortage of iodine in the soil and water. However, according to the FTC, even in those areas the foods will supply sufficient iodine. But to give the devil its due, the Commission gives manufacturers a certain relief from this self-imposed dictatorship for the Commission will allow certain statements to be made in advertising provided it is pointed out that relief is provided if there is a deficiency of either a certain vitamin or mineral in the diet.

Alien Patent Index

A 388 PAGE Supplement and a 360 page Master Index in the seized enemy chemical patent abstracting program has just been published following voluntary work by the Chicago Section of the American Chemical Society and the Science-Technology group of the Special Libraries Association. The complete publication, which can be bought for $25 from the Office of Alien Property Custodian, Chicago, provides ready access to some 8,000 seized U. S. chemical patents, the bulk of which were issued to Germans. Licenses under these patents are readily obtainable by any U. S. citizen for an administrative fee of $15.

Pharmacy as a Profession

"PHARMACY has been defined as the handmaiden of medicine," says Dr. Ivor Griffiths, who continues, "I do not know what that means. Sometimes I suspect that she has been the scrub lady, particularly where it pleased certain elements in medicine to so designate her."

In speaking of the work of National Pharmacy Committee on Public Information to promote the profession of pharmacy, Dr. Griffiths says: "Its only hazard can be in overselling its cause and underestimating public intelligence. Professional caliber is not attained through publicity and propaganda, and a profession cannot be created by resolution or become such overnight. It takes decades for such development and these must be decades of self-denial, times when success by specious means is scorned."

Army Large Cosmetic Buyer

THE women in the Army are causing the Army quartermaster to be a substantial buyer of cosmetics, a recent order consisting of 500,000 jars of creams, 100,000 compacts, 150,000 boxes of face powder, and 200,000 lipsticks, all to be used by the WACs and Army nurses.

Empirical Use Not Certain

TO SHOW what can happen to some of the natural products that have been used empirically in the past, as compared with other natural products whose value was later definitely established by scientific and clinical research, we quote the following written by Beatrice du Frane in the February issue of "Agriculture in the Americas," issued by the U. S. Department of Agriculture:

"Tales of the remarkable curative powers of the *guayacan* tree, told by the natives of the West Indies, fired the imagination of the Spanish explorer, Gonsalvo Ferrand, when he visited that area not long after the discovery of America. On his return to Europe with a few logs, stories of the reputed value of *guayacan* made it instantly popular. Renamed lignumvitae, the 'Wood of Life,' by Europeans, it was considered a remedy for a multitude of diseases, ranging all the way from palsy to leprosy.

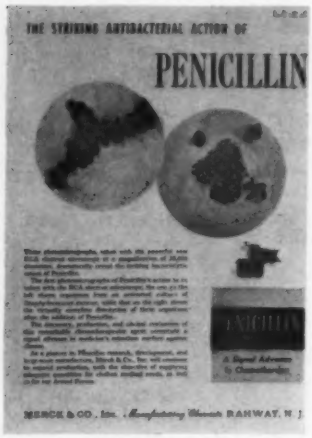
"Since 1508 lignumvitae has been an article of commerce. As early as 1517 medical treatises began to appear, extolling the value of its resin. The value of the wood soared until for a time one pound brought as much as seven gold crowns in Spanish money. Not until two centuries had passed did scientists seriously question its curative powers. Today lignumvitae is little used in drugs."

Abbott Expands Health Insurance

ABBOTT Laboratories has taken an extremely important forward step in the matter of health insurance by inaugurating a plan to aid their employees in the payment of doctor's bills. The plan, which is underwritten by the Equitable Life Insurance Society of the United States, is very specific in its benefits giving a very broad coverage. Under the plan an employee will be reimbursed up to two dollars for each visit to a physician's office, and up to three dollars for each visit by a physician to the employee's home. Payment is limited to one visit each day and to a maximum of fifty visits in any one calendar year. Complete disability is not necessary for the insured to receive benefits, and employees needs not be absent from their regular work at the time of the visits.

It is explained that the schedule of benefits was established by the insurance company merely as a limit to its liability and is not in any way an attempt to fix physician's fees. Free choice of physician is allowed so long as the physician is licensed to practice medicine in the state in which he is consulted. The plan also provides for reimbursement up to $25 in any calendar year for other charges for X-ray and laboratory work incident to diagnosis of non-occupational disease or injuries not already covered under the company's plan of group surgical benefits. All Abbott employees who are insured under a plan of group hospitalization insurance are eligible to receive these new benefits without cost since the company is paying the entire bill.

Penicillin free!
The war is not fought in foxholes alone
It is fought in the home, in doctors' offices and clinics
Gonorrhea is your number one enemy at home
Penicillin cures Gonorrhea
in 4 hours
See your doctor today. He now has penicillin for your treatment. The drug is furnished free for the next 45 days by your State and City Health Depts.



PENICILLIN Makes More Headlines

At 12:01 A. M. March 15 the swift race for distribution of penicillin for civilian use started by truck, automobile, motorcycle, and practically all other rapid means of conveyance, since WPB had given the pharmaceutical manufacturers permission to distribute through their regular channels 1,280,000 vials, or 128 billion units of the important drug during the two weeks ending March 31. For the month of April distribution of 1,500,000 vials or 150 billion units were allocated for distribution through ordinary drug channels. Manufacturers and distributors of the item were all on their toes waiting for the official time for release of the drug to arrive. Shipments to branch houses of the manufacturers had been made well in advance of the release date so that no time would be lost in getting the goods into the hands of the wholesalers, retailers, hospitals and other outlets. The day before the goods were released one manufacturer described the situation as "just like the stock market" with bulletins coming to him continually giving him report on stocks of the drug throughout the country, activities of competitors, and other pertinent information which would enable him to act immediately so that his company's position in the new market would be adequately protected.

One distributor of the product was said to have allocated certain quantities to each of his wholesale distributors with instructions to the wholesalers to allocate supplies in a similar manner to his retail customers. A large manufacturer who sells the product direct to all types of outlets was said to have set up a schedule for wholesalers of 20 and 2 per cent, with 25 and 2 per cent for wholesalers who gave him the break on all open orders.

Another manufacturer had set up his distribution on an automatic basis. He had allocated definite quantities to wholesalers, direct retailer accounts on a percentage basis with similar shipments going forth regularly without any orders being received. If the distributors wanted shipments reduced, it was up to them to notify the manufacturer.

The price situation proved to be unstable and for this reason many shippers of the drug held off billing until a definite bottom was established in the market. The opening price was $2.40 per vial of 100,000 units less 20 per cent for wholesalers and 2 per cent for cash. However, one shipper was said to have quoted this same price although his discount of 20 and 2 per cent was said to be available to buyers for certain chains and for a limited number of large professional drug stores. Large pharmaceutical manufacturers decided that this was unfair to the retail trade and therefore, they cut their prices by 20 per cent which made the price $1.92. However the shipper that caused this upset cut his price to $1.92, still with the 20 and 2 per cent for the same outlets. This caused the large pharmaceutical manufacturers again to cut the price by 20 per cent which made the price to the retailer $1.54. The large pharmaceutical manufacturers stopped there, waiting

another move on the part of the shipper who they claimed had caused the trouble. They declared that there was no bottom to the market as far as they were concerned.

Several manufacturers had cut their prices to the Government from a former price of 80 cents per vial to 65 cents per vial. After the market for civilian material had stabilized at $1.54, the largest manufacturer, who sells direct to the Government, but who sells civilian material through five or six distributors, cut the price to his distributors from $1.15 to 95 cents per vial. So, from the profit angle, penicillin became pretty much of a dead duck so far as the pharmaceutical manufacturers are concerned. With a cost of 95 cents to some, and probably more to others, a price of $1.54 to retailers means a price of $1.23 to wholesalers with 2 per cent off that for cash, meaning that only $1.21 to $1.23 would be received for a very large quantity of the drug. This means a differential between cost and selling price of only 26 to 28 cents per vial on sales to wholesalers. And out of this differential must come the cost of labeling, packing into cartons, shipping, billing and all other expenses, not to mention advertising, detailing, and all the other costs of ethical marketing.

How the material would move into civilian consumption was not generally known although it was generally thought that all available would be quickly consumed. It was thought that the doctors were anxious to obtain sufficient supplies to allow them to build up an experience with the drug as quickly as possible. The only factor that was thought likely to slow up the use of the drug was the fact that the available material is only for use by injection, since no capsules or enteric coated tablets are as yet permitted to be made because oral use of the drug requires larger doses. The greatest restriction on the parenteral or injection use of the drug is the fact that the drug is completely eliminated from the system through the urine in three hours meaning that injections must be given every three or four hours until the infection disappears. Injections of this frequency mean that one must be hospitalized or must be able to find someone that can give the injections every three or four hours day and night. Means of slowing up the elimination of the drug are being discovered and perhaps this might alter this problem somewhat.

The question of whether or not penicillin should eventually be restricted to prescriptions and whether or not the capsules, tablets, ointments, lozenges, nose drops and other forms in which the drug is certain to be presented can be freely sold is a moot question with the doctors pretty much marshalling their forces on the side of complete restriction, and the pharmacists naturally wanting unrestricted sale of all forms of the drug.

It is generally agreed that penicillin is harmless in the ordinary sense. There appears to be no danger of damage to the blood and kidneys, such as is the case with the sulfonamides, or to any other organs of the body. However, the doctors are offering other dangers as arguments against the free selling of penicillin. In the *Journal of the American Medical Association* of March 17, a letter from Leslie A. Falk, 1st Lt. M. C. A. U. S. says that "parenteral administration has resulted in an infrequent but definite number of reactions such as urticaria (itching hives), thrombophlebitis and even contact dermatitis." However, he says that "it is not fully known how many of the reactions described were due to impurities in the penicillin preparations then in use, nor is there much information about toxic reactions, or their lack of them, with penicillin taken by mouth in a vehicle suitable for its ultimate absorption. Penicillin so far appears to be a much safer drug than the sulfonamides, and its widespread use might be accompanied by fewer reactions than with the current widespread use of aspirin or by less economic waste than now accompanies the indiscriminate use of purified vitamins."

However, Lt. Falk then goes on to talk about that great bugaboo that the doctors always use when self-medication is discussed,—the sense of false security. With reference to this he says:

"Perhaps the greatest danger of the indiscriminate use of penicillin is of another sort, namely the development of a sense of false security. Penicillin is of no use

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Statistical Picture in Cosmetics

AFTER having witnessed a more than doubling of their business in the short period of six years manufacturers of toilet goods and cosmetics may probably be justified if they begin to wonder whether this steady growth can continue indefinitely or whether they must be prepared for a slowdown or even a decline in the near future.

The statistical picture of the industry is in favor of further growth; not as fast anymore as during the war years but sufficiently to encourage individual manufacturers to increased efforts.

Using the figures assembled each year by this publication for the purpose of the following analysis of the prospects of the cosmetic markets these show that starting out with 1939, when total sales amounted to $356,700,000, volume has grown steadily all through, culminating in a total of $707,449,000 in 1944. Intermediate steps were $375,630,000 in 1940, $431,180,000 in 1941, $517,896,000 in 1942 and $621,861,000 in 1943. Expressed in percentages rise was slower during the pre-Pearl Harbor part of the war-years (7.1 per cent in 1940 and 11.4 per cent in 1941) and faster during the following years (20.1 per cent in 1942, 20.0 per cent in 1943 and 13.8 per cent in 1944).

It is difficult to establish correctly how much of this rise was the result of higher prices, a tendency of the consumer to buy better grade merchandise, or an actual increase in volume.

However, the following figures and facts bear upon the situation.

The conventional unit price picture of the industry has remained virtually undisturbed through the war. Low unit price toilet goods counters have had an ample supply of merchandise. Where customary limits were raised this was due in almost every instance to the introduction of new merchandise, not usually carried by these stores.

The average sales ticket of the toilet goods counters is showing a higher amount now than six years ago. It was $1.29 in Fall 1939, according to the Controllers' Report in the average department store, rose to $1.34 in 1940, to $1.45 in 1941, $1.53 in 1942 and $1.57 in 1944, the last year for which detailed figures are available; an all over increase of 21 per cent. A predilection of customers to pick higher grade items and the increased demand for larger units are generally mentioned as the principal reasons for this development.

There has been a steady increase in counter attendance all through the years. Transactions rose 20 per cent at an average in 1943 while sales per square foot of counter space have increased steadily during the war period. They amounted to $85.00 in 1940, reached $97.00 in 1941, $108.00 in 1942 and $133.00 in 1943, according to the same authority.

In other words, more customers have bought more and often better cosmetics. While undeniably allowance must be made for such cost-increasing factors as the need of catching up with the rising prices of raw materials during the early part of the war, discontinuation of unprofitable numbers and their replacement by others and the compelled introduction of new lines, making use of easier accessible ingredients, it is not likely that physical volume growth has remained behind dollar growth more than an average 20 per cent.

As all-over sales of cosmetics and toilet goods have grown through the war so, correspondingly, has per capita consumption although not quite as fast as might have been expected in view of the proportionally much larger rise in women employment.

Even so the individual consumer is buying today practically twice as much as he or she bought at the start of the war. Per capita consumption was $2.69 in 1939 and reached $5.43. Considering the widely distributed rise in buying that has characterized the war years the yearly steps from 1939 to 1944 are not exceptional. The per capita figure for the intervening years stood at $2.86 in 1940, $3.26 in 1941, $3.86 in 1942 and $4.57 in 1944. Expressed in percentages the most active increases occurred during the years from 1940 to 1942 when per capita consumption rose in three sharp steps of 6 per cent in 1940, 14 per cent in 1941 and 19 per cent in 1942 after which year the per capita growth curve flattened out to 18 per cent for each of the two following years.

Both the rate of increase in the total annual sales of cosmetic and toilet goods and their per capita consumption rate became stabilized by 1942. Growth while substantial and far exceeding pre-war levels remained surprisingly steady.

While there is undeniably a connection between the entry of the nation into the war as a combatant and the rate of consumption of cosmetics it would be a mistake to ascribe all, or even most of the recent rise to war influences exclusively.

It is interesting to note and of possible bearing upon the future development of toilet goods sales and consumption that the rate of growth of the sales curve of toilet goods and that of per capita consumption for each of the three year periods preceding Pearl Harbor, and following it, are practically identical. Annual sales rose 9 per cent at an average during each year from 1939 to 1941 and per capita consumption 10 per cent. The corresponding growth of each during the years from 1942 to 1944 averaged 18 per cent.

The rise in purchasing capacity resulting from increased war earnings is only a partial explanation for the rapid increase of toilet goods and cosmetic sales during the second half of the war, to all appearances. While there is no denying that the sudden upward swing of consumer income in 1941 and 1942 has helped toilet goods sales to establish themselves upon new and higher levels their further growth during the following years is in no way duplicated by a similar rise in purchasing capacity. As a matter of fact, purchasing capacity rose only slowly from 1942 onward (6.4 per cent in 1943, 7.5 per cent in 1944) compared with the three years average of 9 per cent for the years 1939 to 1941 and 13.1 per cent during 1942.

Obviously, toilet goods sales and their rate of consumption followed a course of their own, once they had become part of the higher living standards and living needs of the war-period. Other reasons than growing consumer income were responsible for the continued prosperity of the toilet goods counters.

War trends, doubtless, have led to the appearance upon toilet goods counters of such new articles as skin protectives, items duplicating those which could not be manufactured in sufficient quantities because of lack of materials or packaging, the growing number of men's cosmetics. However, widening the supply does not

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Final storage tanks in the Campana Sales Company's plant near Batavia, Illinois.

Clarification of Liquids

By E. G. THOMSSEN, Ph.D., Consulting Chemist

THE proper clarification and filtration of liquids presents more difficulties than are indicated by a mere superficial consideration. In the making of such solutions as lotions, liquid oral preparations, tonics and medicinal solutions, the question of clarity and how to maintain it, is frequently the most troublesome part of the processing procedure. The usual or common causes for clouding and sediment formation or precipitation in a liquid preparation may all appear to be eliminated at the time the product is packaged, only to reappear as a serious defect months later. This imperfection may take on the form of an unsightly, discolored sediment at the bottom of the bottle or at the top, or it may be distributed through the liquid in flocculent or slimy form or so finely divided as to cause a slight cloudiness or opalescence that at times causes a lightening up of the color due to refraction of light. The annoying part of these conditions is that the amount of sedimentation, which is the cause, is so small that it is hardly discernible upon refiltering the defective solution or is not removable by filtration easily.

Most of the solutions of the type mentioned consist of the desirable ingredients dissolved in water, alcohol or glycerine. These most commonly used solvents are in themselves quite stable and may be had in very pure state. It is quite probable, therefore, that the solvents are not the cause of the difficulties. The density of the solution, that is its lightness or heaviness, may also be

eliminated as the prime reason for sedimentation, since the difficulties occur in both light and heavy liquids.

It, furthermore, occurs in viscous or mobile types of solutions so that viscosity does not play a major part. The main reasons for sedimentation in the great number of cases are improper use of filters, incompatibilities, too great a concentration, action of micro-organisms and slow oxidation or other chemical changes. It is pertinent then to consider these causes in more detail and to point out possible methods of overcoming them.

Since filtration is the most important operation in clarification we will consider this first.

There are numerous types of filters available and the selection of the proper one for the particular job is necessary. In considering the selection of the correct filter the chemical and physical properties of the solution to be filtered must receive careful consideration. A knowledge of what it consists of, its density, whether it is alkaline or acid, what metals it will corrode, its viscosity, whether it requires high pressure during filtration, whether it can be filtered at reduced temperature without difficulties, and whether it volatilizes easily are necessary to the best selection of a filter. Such information should be fully taken up with the equipment manufacturers. Other points to be considered are capacity, whether the filtrate is of any value and are filter aids necessary. Production men at times overlook these points with the result that the wrong type filter is selected and also a filter of too small or too large a capacity is installed.

While it may be unnecessary to do so, it is well to designate the main types of filters available. Among these are included the simple funnel and filter paper type and variations thereof through devices to hold filter paper, edge type filters, porous ceramic filters, filters employing filter mass, rotary filters and filter presses with plates made from metal or wood and employing paper, cloth or metal cloth as the filter media. Each type of filter has certain advantages and at times, where special difficulties prevail, it is desirable to use double filtration using a combination of filters to obtain the desired result.

Filter aids are often used in conjunction with filters. These include many materials such as talc, Fuller's earth, magnesia, powdered washed asbestos, gypsum, Kieselguhr, diatamaceous earth, paper pulp and sawdust, as well as other substances chemically inert to the liquid to be clarified. Activated clays, charcoal and other charcoals are also used for decolorizing or bleaching. These filter aids are of great value where the finer solids are apt to pass through the filter medium with the liquid especially, if the particles are colloidal, slimy or non-rigid. Their use not only accelerates the filtration rate, but forms a porous cake on the paper, ceramic or cloth that replaces these filter media by this cake. It is customary to use filter aids through two methods. These are to precoat the filter with the filter aid cake, by first dispersing it in water or other solvent and passing the dispersion through the filter to build up the cake or layer before filtering the liquid. The other method is to stir the filter aid directly into the liquid to be clarified. It is then passed through the filter, usually discarding the first portions for refiltration. In certain other cases the dispersion is made as indicated and then the filter aid is permitted to settle out. The supernatent liquid is then filtered and special desirable filtering procedure is used to recover the liquid from the bottom drainings if they are valuable enough to recover.

In spite of carrying out these methods of filtering carefully, complete clarification is not assured. In such cases, the difficulties lie in other directions like incompatibilities, too great a concentration, bacterial and fungicidal reaction or slow chemical changes usually due to oxidation. To overcome these other processing procedure is necessary.

The question of incompatibilities involves an intimate knowledge of the ingredients used in the solutions. The chemical reactions which may occur are manifold and require individual rather than general attention. At times these reactions may be slow and again they may occur rapidly. Common difficulties of this sort involve the acidity and alkalinity of the solution Alkaline substances usually give more difficulty than the acid ones. Then too, there have been cases on record where the alkalinity of the solution slowly dissolved out a portion of the glass to produce defects. While on this subject of container it is well to point out that it is good practice to be certain that all the elements entering into the containers contacting the liquids are investigated. Screw caps, liners, corks and other closures should be chemically inactive and insoluble to the contents. Numerous cases of defects because of this oversight have occurred. Small quantities of metals notably iron and aluminum are apt to form a gelatinous sediment in alkaline solution. Gums, resins, perfume products, gelatine and other albumins are apt to cause difficulty unless the solvent and chemical action of the ingredients used are carefully considered. Soap solutions will cloud easily in the presence of the heavy metals, through which insoluble soaps are formed. Other products like resorcinol will darken in light and may cause cloudiness upon future aging. Boric acid is thrown out of solution in the presence of certain organic acids and mineral salts. Dyestuffs will cause difficulty unless suitable colors are used in alkaline or acid solutions. Vegetable dyes are also prone to cause slow sedimentation under favorable conditions.

In many cases, impurities, in presumably pure raw materials, may be the cause. These are but a few of the many reasons for sedimentation due to incompatibilities. In cases where it is not easy to trace the cause it is a good practice to watch and standardize the pH. Another method is to make up the finished product and eliminate one ingredient at a time until the one causing the difficulty is found.

Another common cause for sedimentation difficulties, is too great a concentration in a liquid or using a solvent which is not completely satisfactory. In an

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Unreasonable F.T.C. Powers

THE changes in the Federal Trade Commission Act and in the Wheeler-Lea Act for which this industry has been asking many years are embodied in a bill (HR 2390) introduced in Congress by Representative Reece of Tennessee. Mr. Reece is a member of the House Committee on Interstate and Foreign Commerce, which committee must approve the bill before it comes before the House.

The bill covers three needed changes which are:

1. To provide adequate court review of the Commission's orders.
2. To limit the amount of penalties for a single violation of the Commission's orders.
3. To avoid dual jurisdiction with the Federal Food, Drug and Cosmetic Act.

The importance of the bill to this industry is clearly indicated by the statement of its purposes. All industries have a vital interest in the first two principles of the bill, and this industry, has a vital interest in the third purpose as well. It has long been recognized that under the present laws the Federal Trade Commission is the complainant, jury, judge, and counsel. The courts have many times felt that the orders of the Commission were not proper, but the courts were powerless to do anything about the flagrant violation of power on the part of the Commission. If this new law is enacted, the courts will be able to give relief in cases where the Commission's orders are not justified or are too drastic.

The matter of the Federal Trade Commission, acting under the powers given to it by the Wheeler-Lea Act, issuing orders in alleged violations which should come under the jurisdiction of the Food and Drug Administration through the FDA's enforcement of the Federal Food, Drug, and Cosmetic Act, is one that has caused great hardships to manufacturers in this industry. There have been instances where violations of this kind have been decided by the FTC; then when the FDA took up a similar action, the court has refused to review it because they have claimed that the matter has already been adjudicated in the case brought by the FTC. This has made it impossible for manufacturers to get fair hearings upon these alleged violations because the FTC has had the power to decide the case without review by the courts.

One of the most important factors in causing this conflict in control of the products of this industry by these two agencies is said to be Dr. James J. Durrett, who is the director of the FTC's medical advisory unit. Dr. Durrett, who is a hard fighter with his heart in his work, will be well remembered by this industry as chief of drug control in the FDA many years back. Dr. Durrett is an extremely hard worker, and at the time he was with the FDA, his activities were so swift and so drastic that he was branded a "therapeutic nihilist" by the industry and roundly hated by a larger number of the personnel in the drug manufacturing houses. It appeared at the time that Enforcement Chief Walter G. Campbell did not know what to do with Dr. Durrett, and Campbell was described as having a bear by the tail. But finally the situation was relieved when Dr. Durrett accepted a position with E. R. Squibb & Sons.

DR. JAMES J. DURRETT

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The New Drug Regulations and Proprietary Drugs

By ERWIN Di CYAN, Ph.D.*

THE Federal Food, Drug, and Cosmetic Act passed in 1938, had a profound effect on the marketing of drug products, since it was substantially the first regulation by the government since 1906. In the intervening years, the advances in science were so phenomenal, and the problems attendant with therapy so profound, that the new legislation was expected to depart markedly from the pattern of the old 1906 Food & Drugs Act. The Federal Food, Drug & Cosmetic Act was amplified since 1938, with the revision of several regulations. The regulations last revised (October 10, 1944) deal with (a) new drugs and (b) labeling. The provisions pertaining to new drugs became effective immediately upon promulgation, and those concerning labeling of drug products will become effective one year after their enactment, i.e. on October 10, 1945. These last named regulations will have an almost revolutionary effect in the labeling of proprietary drugs, and consequently, their movement in commerce.

The text of the provisions essentially requires that labeling be informative to the consumer. Under these conditions, every drug product (with the exceptions named below) will have to bear on its label, information relative to (a) the conditions indicating the use of the drug, (b) full directions for all conditions in which the use of the drug is recommended, (c) size of the individual dose, (d) its frequency of administration, (e) the duration of its use, as well as (f) time of administration and other information. Only the following types of preparations would be exempt from the above provisions:

1. Products containing toxic drugs as sulfonamides, phenobarbital or other habit-forming drugs, most narcotic preparations, etc., which cannot be safely used by the laity, unless under the supervision of a physician.

2. Certain drugs official in the United States Pharmacopoeia or the National Formulary as acacia or sodium citrate, which are not called for by the laity anyway, since they are usually components of prescriptions.

3. Certain inactive ingredients used in the manufacture of drugs, as solvents, coloring or flavoring matter.

4. Drugs shipped to physicians directly, for their professional use.

5. Drugs used for the manufacture of other drugs, and not used per se.

6. Ordinary drugs used in the household, such as sodium bicarbonate, fennel seed, or others, the directions of which are known to the ordinary layman.

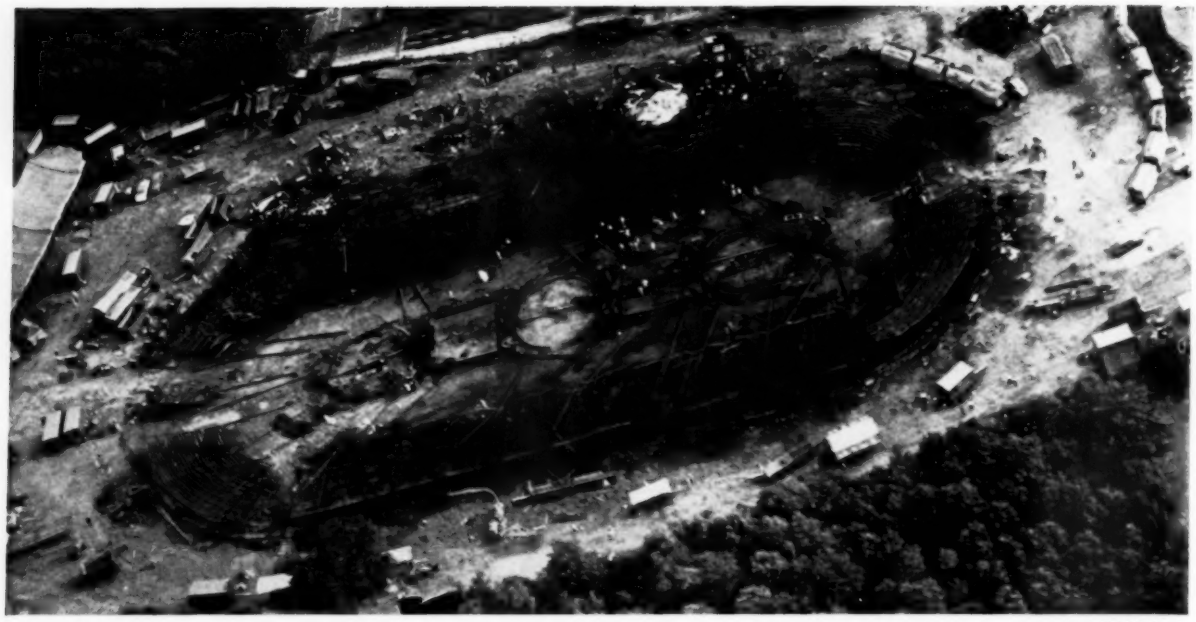
The above groups naturally exclude only a minor proportion of the proprietary drugs in common use. Therefore, it is apparent that by far a great number of proprietary preparations are affected, perhaps 75% or more, of the total number of proprietary preparations sold.

To understand how the provisions of the new regulations will affect any drug product, one must bear in mind, that many drug preparations have been marketed in the past, with a statutory exemption. This exemption allowed a manufacturer to use on the labels of his products, the legend "Caution: To be used only by or on the prescription of a physician," in lieu of the full informative labeling which was otherwise mandatory. The exemption provided an advantage in the cases of the so-called ethical pharmaceutical manufacturer whose products were only used by the physician. Such an exemption will not be elective after October 10, 1945, for the prescribed information will be mandatory for all drug products, except those that fall into any of the above six classes listed above.

The Food & Drug Administration has taken the position in the past, that many products, particularly those containing drugs which have a potentiality for harm, cannot be sufficiently labeled, so that they be safe for the unsupervised use by the layman. The logic of this position is readily apparent, for it is not conceivable how a layman can use a self-prescribed sulfonamide preparation *safely*. This view, however, may be applied conversely, i.e. the position most likely will be taken by the Administration, that it will not be possible to label certain safe preparations, so that they can be used *effectively*. The question of efficaciousness does concern, and is definitely within the jurisdiction of the Administration; for example, a product may be *misbranded* if it is not efficacious for the purposes for which it is represented, hence misrepresented.

(*Continued on page 528*)

*Director of Di Cyan & Brown, Consulting Chemists, New York, N. Y.



PRESS ASSN.

In addition to considerable work indicating that polyvinyl alcohol is valuable as a blood substitute, it has also been used successfully in the preparation of burn-treating materials. The above photograph is an air view of the site of the tragic Hartford circus fire.

Possibilities of Polyvinyl Alcohol

By M. A. LESSER

DURING recent years, quite a number of industrial materials have been adapted to the needs of the healing arts. From all indications, polyvinyl alcohol, or PVA as it is often called, will turn out to be another such substance. A water-soluble plastic with important industrial uses in various fields, polyvinyl alcohols display properties which make them of definite interest to the physician, the pharmaceutical manufacturer and the cosmetic producer.

A derivative of acetylene, itself obtained from coal, limestone and water, polyvinly alcohol is a typical example of modern synthetic chemistry. To make the resinous material, a stream of acetylene in acetic acid gives vinyl acetate which may then be polymerized to various degrees, after which it is hydrolyzed to give polyvinyl alcohol.[1] Polyvinyl alcohols are generally supplied as white-to creamy-white, odorless and tasteless powders. Because they are long chained polymers, with the formula $(CH_2CHOH)X$, molecular weights of polyvinyl alcohols are difficult to determine with accuracy. Hence, it is much more convenient in commercial practice to use the viscosity of aqueous solutions as a basis of comparison of the various grades.[2] The two types of polyvinyl alcohol, type "A" and type "B", are thus provided in low, medium and high viscosities.[3] The different grades represent different stages of polymerization and upon the selection of the proper grade of polyvinly alcohol will depend the results obtained.[4]

Perhaps the most interesting thing about polyvinyl alcohols is the fact that they are readily soluble or dispersible in water. The aqueous solutions are stable over an indefinite period because polyvinyl alcohols are not affected by bacteria and only rarely by fungi. The best way to prepare aqueous solutions of PVA is to stir the powder into cold water until all lumps are broken up and a smooth mixture results. After this, the mixture is heated with continued stirring until a clear solution results.

The viscosity of dilute solutions of polyvinyl alcohols, such as those ranging from 1 to 5 per cent, remains

unchanged on storage at ordinary temperatures and during prolonged heating and stirring. The more concentrated solutions, especially those of higher viscosity PVA, may gel on standing but this can be remedied by heating to about 75° C. The addition of certain substances, such as boron compounds, sodium perborate, and silicates, greatly increase the viscosity of polyvinyl alcohol solutions.[2] Solutions of Congo red have also been advocated for the same purpose.[5]

Of importance in the preparation of burn-treating materials, surgical sutures and other medical items is the fact that, upon the evaporation of water, tough, resistant films may be prepared from solutions of polyvinyl alcohol. Such films are colorless, odorless, tasteless, transparent, exceedingly tough, strongly resistant to oils and greases, dirt and solvents and highly impermeable to many gases, including air and oxygen. However, PVA films are sensitive to water. In many instances this is not of major importance, but where it is desired to make the films water-resistant proper treatments are available. Many different processes have been recommended for insolubilizing and moisture-proofing PVA films, either before or after their formation.[6]

Polyvinyl alcohol is also a good emulsifier and dispersing agent. Said to be quite versatile as an emulsifying agent, PVA offers the advantages of neutrality and non-corrosiveness.[2] Useful with a variety of materials, it is suggested that trials start with at least one part of polyvinyl alcohol to six parts of the material to be emulsified. Experimentation is required to determine the correct amount of PVA necessary to produce stable emulsions.[7] Polyvinyl alcohol is also an efficient binding agent.

Since, in the new developments, polyvinyl alcohol is proposed for use in and upon the body, the question of safety looms as a major consideration. Considerable evidence, based upon experimental and clinical observations, has been accumulated with regard to the effects of PVA on the tissues after various methods of administration or application. Nonetheless, newer work reported during the last year or so has clearly indicated that the grade of polyvinyl alcohol used may materially influence the toxicological picture.

From the point of view of chemical effect, no toxicity of polyvinyl alcohol appears to have been demonstrated. There is no established evidence that PVA is taken up directly by epithelial tissue, since application to the skin, peroral administration and intratracheal injections result in no demonstrable alcohol in any tissue.[8] According to Jones,[6] toxicological examination of polyvinyl alcohol has shown it to be entirely noninjurious to the skin. In experiments on dogs over a period of time up to six months, massive doses of PVA were added constantly to the diets. The results showed no demonstrable injury to the animals, and microchemical tests showed no evidence that the material was absorbed. It appears, therefore, that when applied to the skin or taken by mouth polyvinyl alcohol is entirely harmless.[8]

The parenteral administration of polyvinyl alcohol is something else. Considerable evidence has been presented to show that, when injected subcutaneously, intraperitoneally or intravenously, polyvinyl alcohol may be widely distributed in the body and may accumulate in various organs of the body where it can produce harmful effects through purely mechanical means,[9, 10, 11] Indeed, after reviewing the evidence, one of the largest producers of polyvinyl vinyl alcohol stresses that this material was not suitable for intravenous use. This view was quite justified on the basis of earlier experiments, particularly those concerned with the use of polyvinyl alcohol as a blood substitute.[12, 13, 14]

New and very important work has caused a revision of some of this data and has served to stress the importance of selecting the proper grade of PVA for parenteral administration. For example, Heuper and his coworkers[11] had employed preparation RH391, a polyvinyl alcohol with a viscosity of 55 centipoises. With such a viscous solution, intravenous injections in animals resulted in a decrease in red blood cells and hemoglobin and an increase in the blood sedimentation rate, as well as other undesirable effects. Last year, however, Locke[15] got much better results by using the RH623 grade of PVA which has an approximate viscosity in 4 per cent solution of 5 centipoises.

In checking a new experimental method for evaluating blood substitutes, Locke had made a comparison of several substances, including plasma, which had been recommended for the treatment of traumatic shock In this work, it was observed that the PVA solution was more than twice as effective as plasma itself in preventing death from shock in rats. Comparison of results showed that when the low viscosity PVA solution was administered, 65 per cent of the animals survived the shock treatment. With plasma, 25 per cent of the animals survived, with saline 40 per cent, with an isinglass solution 25 per cent, while with the untreated controls, only 8 per cent lived.

Several months later, Roome and his associates[16] reported more elaborate studies of the suitability of polyvinyl alcohols as blood substitutes. Their work with dogs showed that polyvinyl alcohol RH623 is a suitable colloid for a plasma substitute because it maintained the blood pressure as well as did blood transfusions and it was lost from the blood at about the same rate at which the plasma proteins regenerate. Subsequently, 4 per cent solutions of polyvinyl alcohol RH623 were given to four human subjects. There were no untoward reactions. Dilution of the blood occurred and persisted for twenty-four hours after large doses of 125,420,430 and 480 cc., respectively.

Although characterizing polyvinyl alcohol RH623 as a nearly ideal inert plasma substitute, Roome and his coworkers point out that inert substances do not promote wound healing or act as foodstuffs as proteins might. Nor do they contribute to hemostasis and large amounts might impede clotting by diluting the fibrinogen. They obviously do not provide antibodies and

erythrocytes and therefore are valueless in anemias and infections except to improve peripheral circulation. On the other hand, their nonprotein nature is also an advantage in lessening the likelihood of anaphylactic reactions.

These workers feel that, if limited to its proper field, polyvinyl alcohol would appear very desirable as a first treatment for hemorrhage or shock, assuming that hemostasis can be obtained or that direct bleeding is not a prominent factor. They are of the opinion that the small cost, ease of preparation and stability in storage of a PVA solution would permit keeping it available for emergency use in amounts larger than could be maintained in a blood or plasma bank.

Very recently, in discussing colloid-plasma substitutes, an editorial[17] in the *J.A.M.A.* pointed out that properly prepared solutions of hydrophylic colloids have certain advantages over plasma. They are relatively inexpensive, readily available in large quantities and in sufficiently pure form, and nonantigenic. Several of these agents, including polyvinyl alcohol, are not easily contaminated with micro-organisms and do not undergo any appreciable physiochemical changes on autoclaving. Referring to the work of Locke and of Roome and his associates with PVA, the editorial notes that, "These observations revive the hope that the search for the ideal plasma substitute is still a promising field of scientific endeavor."

Of course considerably more work must be done before polyvinyl alcohol solutions are fully accepted, but the newer work is very promising. However, there are some dissenting views. For example, in comparing some blood substitutes used for the treatment of experimental shock, Scott, Worth and Robbins[18] concluded that water and sodium chloride were the effective agents and that the addition of gelatin, pectin or polyvinyl alcohol did not add to or subtract from their effectiveness.

While on the subject, it should be of interest that a patent[19] has been granted covering the use of polymerized vinyl alcohol as a blood stancher. The sterile powder, it is claimed, may be applied as such or may be combined with iodoform, iron perchloride, or the like to form a sterile, stanching, vulnerary powder. These stanching or antibleeding remedies could be used for external application to wounds or they could be administered by injections or by mouth. Rather novel was the suggestion that soap containing emulsions prepared with the use of PVA imparts a desirable stanching effect to shaving cream. In passing, it should be mentioned that this patent is now vested in the Alien Property Custodian.

When, a few years ago, interest was being manifest in film forming materials for treating burns, it was but to be expected that some attention would be focused on the possibilities inherent in polyvinyl alcohol. This substance fits the picture quite well, for in addition to being water-soluble and water-dispersible, it forms tough, clear, protective films of the type required in the newer burn therapy.

In Canada, working with funds supplied by the National Research Council, Skinner and Wand[20] undertook a series of studies in which a plastic film treatment of experimental burns was compared with certain eschar-forming preparations. Two sulfonamide-medicated preparations containing polyvinyl alcohol were tested, these being known respectively as burn fluids 19 and 20. Burn fluid 19 was prepared as follows:

Glycerine	**80.0 Gm.**
Triethanolamine	**5.0 Gm.**
Urea	**5.0 Gm.**
Sulfathiazole	**5.0 Gm.**
Sulfanilamide	**5.0 Gm.**
Stock solution of methyl cellulose	**100.0 Gm.**
Stock solution of polyvinyl alcohol	**800.0 Gm.**

Burn fluid 20, a slight modification of the above, was made from:

Glycerine	**40.0 Gm.**
Triethanolamine	**2.5 Gm.**
Urea	**5.0 Gm.**
Phemerol	**0.5 Gm.**
Sulfanilamide	**5.0 Gm.**
Stock solution of polyvinyl alcohol	**947.0 Gm.**

The stock solution of methyl cellulose specified in burn fluid 19 was made from:

Methocel 25CBD	**8.0 per cent**
Benzoic acid	**0.1 " "**
Ringer's solution, to make	**100.0 " "**

The stock solution of PVA, employed in both fluids, was as follows:

Polyvinyl alcohol	**8.0 per cent**
Benzoic acid	**0.1 " "**
Ringer's solution, to make	**100.0 " "**

All-in-all some 229 experiments were performed; the PVA burn fluids being compared with tannic acid and with weak and strong triple dye in healing power and eschar formation. Comparison of results in non-infected experimental burns on rabbits demonstrated that burns treated with burn fluids 19 and 20 healed in a shorter time than did those treated by means of the older methods—a very significant observation. The PVA burn fluids also displayed a greater anti-infective ability than did the weak triple dye solution or tannic acid. Although strong triple dye solution caused the fewest infections, this favorable finding was largely negated by the adverse effect on healing time.

Since both of the newer burn fluids are water-soluble, their eschars are easily removed after soaking for a few minutes with a warm saline solution. Removal never resulted in damage to the underlying tissue. These fluids did not appear to stimulate granulation tissue, although the speed of epithelization was apparently increased. Burn fluid 19, although resulting in fewer infections than burn fluid 20, had many more severe infections, so that it would appear that burn fluid 20, made with polyvinyl alcohol alone as the film-former, is of more value against infections than burn fluid 19. This, however, may be attributed to the presence of an antiseptic in burn fluid 20.

This new type of plastic treatment, based on sulfonamide-containing polyvinyl alcohol solutions, is reported[21] to have been used with "outstanding success" after a fire at a dance hall at St. John's, Newfoundland. The fluid formed a protective coating over the wound while permitting freedom of movement. It was found that wounds treated with this preparation heal from five to forty days sooner than burns treated by other methods.

The film-forming properties of polyvinyl alcohol have been utilized in the production of transparent, tough, flexible gloves offering protection from the action of oils and many deleterious organic solvents.[2] Since it is possible to make films and sheets with PVA, it is also possible to make filaments of the material. Hence it is not surprising to find surgical products, including threads, bandages and tubes, made from polyvinyl alcohol pastes or solutions containing therapeutic or antibacterial substances, described in the literature.[6] One such group of medicated polyvinyl alcohol products is detailed in a foreign patent.[22] PVA threads have been suggested as substitutes for catgut, used as a wound-suturing material.[23, 24] It is felt that the use of polyvinyl alcohol as a suturing material is probably safe because of the small amount introduced into the body.[8]

In his discussion of synthetics in pharmaceutical and medical preparations, Middendorf[24] mentions that polymerized vinyl alcohol makes good pill casings. Of interest in this connection is Herrmann's[19] suggestion that suppositories with any desired degree of elasticity and flexibility may be made by pasting medicaments with PVA and aqueous glycerine.

The thickening and suspending properties of polyvinyl alcohol have also come in for a certain amount of attention in the production of medically-useful materials. For example, aqueous nose-drop or nasal spray compositions containing therapeutic ingredients such as ephedrine sulfate in aqueous solution may have incorporated in them about 3.5 per cent of polyvinyl alcohol, which serves to give increased viscosity at nasal temperatures.[25] In another instance, 3.5 per cent of polyvinyl alcohol has been added to a solution of a special organic compound to procure satisfactory viscosity for certain types of X-ray work. In a report of the use of such a fluid in routine gynecological diagnosis. Bernstein[26] says that this material, known as "Viscorayopake," has fulfilled the requisites for an adequate and satisfactory opaque medium for pelvic X-ray studies (e.g. hysterosalpingography). Nontoxic, quickly absorbed, chemically stable and amply viscous, the material is easily administered, and does not gel or crystallize at room temperature.

Rather interesting in view of certain trends in therapeutics is a patented[27] procedure describing methods for making sterile masses suitable for use as medicinal depot carriers, depot base substances, masses for infusion and plastic fillings. These are prepared by heating a paste or solution of polyvinyl alcohol with various substances. For example, an aqueous solution

(Continued on page 520)

Vermont News Letter

From H. J. Sanders, Sanders Pharmacy, St. Albans, Vermont:—Enclosed please find a letter received by us from Mr. ————, former ————— representative in this territory. As far as we can ascertain the letter explains in a nut shell just what happened to this man. (Editor's Note—The enclosure mentioned says that the man was "fired after 20 years.") We have been reading your News Column for the last 2 months for some clue as to what possible trend in the Cosmetic Distribution System this act portrays and as we have been unable to find any clue we are taking the trouble of sending you this letter so that you may explain in your News Column just what is happening, as we are quite upset about this matter and imagine countless others are also.

This ———— was no ordinary order-taker. To us he appeared to be a Super salesman possessed of a personality and bearing that is seldom found in the usual salesman. His territory was perhaps the most difficult to cover in the whole United States due to the distance between towns, the smallness of the cities and the general weather and road conditions that are prevalent here.

We hate to think that ————and possibly others are being "penny wise and pound foolish" by letting men of Mr. ———— type go to be possibly replaced by a representative who would be under an entirely different remunerative set-up that would save the company a few dollars per year.

We deliberated quite a spell before bothering you with this trifling item but being way up here in the woods just South of the Canadian border the only touch we have with big business and continental civilization is through the papers and magazines we receive and being fully aware that we perhaps would never be so far away from home as New York City and able to call on Mr. ———— and ask him what the hell the idea was in firing Mr. ————, we are taking the liberty of asking you to be so kind as to do this for us.

We do not expect a direct reply from you with regard to this matter but will watch your News Column faithfully for the next issues to see if you can give us any hint as to what this trend portrays.

Yours sincerely,

H. J. Sanders

Dear Mr. Sanders,

We are sorry that we cannot tell you exactly what the score is in this particular case, but there are a lot of funny things happening these days. What with the excess profit taxes, ceilings on salaries, record-breaking sales and commissions on sales, streamlining sales organizations for the war years, and building them up again for the post-war markets, many a good man gets bumped off in the shuffle while somebody of smaller stature rides forward on a wave which was not of his own making and over which he has no control.

The Editor.

IT PAYS TO BACK
PRODUCT QUALITY
WITH
Fine Packaging
Millions for research, manufacturing and distribution merit the reward of the finest consumer packages. As a well trained fighter deserves the best equipment—a good product needs to be well prepared for the market attack.
To the useful field of folding cartons Ridgelo Clay Coated Boxboards bring the fighting values of smoothness—brightness—true ink results and uniformity. Keep Ridgelo in your cartoning plans. It does so much for so little!
★ Do Your Share In The Waste Paper Campaign ★
Ridgelo
CLAY COATED
BOXBOARDS
MADE AT RIDGEFIELD, N. J.,
BY LOWE PAPER COMPANY

Representatives: Bradner Smith and Company and Mac Sim Bar Paper Company, Chicago • H. B. Royce, Detroit
Gordon Murphy and Norman A. Buist, Los Angeles • A. E. Kellogg, St. Louis • Philip Rudolph & Sons, Inc., Philadelphia

Packaging and Selling

Trouble in Hormone Creams

Although there were those who freely predicted about a year ago that the hormone creams, then hitting their stride, were headed straight for the 10-cent stores, no one really believed that a year would find them so close to that goal. For any such eventuality apparently depended upon improved methods of collecting and refining the natural estrogenic substance upon which the hormone creams depended. For with vegetable oil solutions of the stuff, with potencies of 10,000 International Units per cc. selling at $75 per litre, it wasn't in the wood for a 10-cent product—yet. And, even though we have heard of prices as low as $30 per litre that still doesn't open the way for a dime-store hormone cream—at least not for one made of natural estrogenic substance.

As it happened, that last clause provided the out!

For though everyone who knows anything knows about diethylstilbestrol, and though it provides the accepted form for internal medication when estrogen therapy is indicated, all of those who had engaged in the scientific work connected with ointments and lotions designed for surface application, had apparently disregarded stilbestrol in favor of the natural product. For stilbestrol is a synthetic estrogen and as such can be purchased for 35 cents a gram, which, assuming the same potency, is roughly in the relation of 1-50 or 1-100 as compared with the price of the natural depending upon whether you buy at the $30 level or the $70 level. Other considerations aside, this kind of a price for the active ingredient makes a dime-store hormone cream immediately possible.

Although G. Barr & Co., Chicago, has not taken the ultimate step, it has done the next thing to it by marketing Protomone, in a one-ounce bottle for 25 cents, and in a 6-ounce package for $1.49. The label calls Protomone a "synthesized hormone cream" and adds that "each fluid ounce contains 5,000 units of synthesized hormone substance (diethylstilbestrol)". The literature further states that "this ingredient helps to compensate for the loss of the natural hormone and to retard the effects of age on the skin." They may well be a claim which will bring the F.T.C. charging into the hormone cream field for it is apparently broader than any claim we have seen for products of this type. It's a claim which, for the good of the industry, we hope G. Barr & Co. is prepared to prove.

Another thing which may bring the F.T.C. into the picture is the direct comparison the Barr advertising copy makes with other hormone creams. This shows a 1 7/8 oz. jar of cream A, at $3, containing about 14,000 I.U., a 1 6/7 oz. jar of cream B, at $5, containing about 9,300 I.U., and a 15/16 oz. cream C, at $5, containing about 5,620 I.U. In other places a more general statement is made that "Protomone cream is equal in potency, ounce for ounce, to many hormone creams priced at $3 to $5 for two ounces or less." This is a statement which other manufacturers are going to resent and they may well claim that it is unfair competition, since it does not make plain the fact that the other creams referred to use the natural and not the synthetic estrogen.

Of course, the company may be prepared to prove that the synthetic is better than the natural for surface application for the advertising says that "Protomone is the result of eleven years' study of the age-retarding effects of hormones on the skin, conducted by one of America's leading research laboratories."

The fact that every product which has thus far appeared including Endocreme, Arden, Gray, Rubinstein et al, has made use of the natural substance after studying both the natural and the synthetic, is not in itself conclusive, but the literature appears to bear out the superiority of the natural over the synthetic when designed for surface application.

In our May issue "Potentialities of

Packaging Forum

By Josephine von Miklos

ON DESIGNING LINES FOR MEN: Is the tough young Seabee a sissy when he writes his wife that the one thing he wants upon his return from the Pacific is a certain brand of shaving bowl and after shave lotion? What has happened to the middle-aged captain with an American Army group somewhere in France who went into rhaspodic ecstacy upon receiving a bottle of Cologne along with some crackers and cheese? And what, in a much broader sense, is occurring in the cosmetic industry in general, when there is hardly a house left that has not gone or is not at this moment going into the manufacture and promotion of another toilet goods line for men?

The answers are, as usual, not as simple as the questions. Perhaps our fighting men crave good smells the way a fagged-out civilian needs a coke after a hard day of work. Perhaps, under certain difficult conditions of sanitation, a dab of cologne is as cleansing as the more humble pail of water. Or, could it be, that some of this, or all of it, is again our, the women's fault? We who have indulged for so long in the countless whiffs lavishly showered on us by an ever alert industry, are we at last demanding that our men smell as nicely as we do?

Whatever it may be, here it is, a tremendous new field for toilet goods in which not only the established items such as shaving soap play a part, but also new ideas along the lines of promotion, presentation and last but certainly not least, packaging.

And this is the point where once again the designer finds himself, or herself, in the amusing position of creating things which do not, necessarily, have to appeal to the ultimate consumer, but rather to the taste of the person who makes a gift. We are told time and again that men do not go out to buy for themselves a set of cosmetic fancy goods. It is the women who buy; and they buy what they *think* men like. It seems to be a generally accepted idea that men like tailored things, simple in decoration, and sturdy in construction. But it has also been at last divulged, that men too like things which are luxurious and which brighten the generally drab appearance of a man's bag, dressing table, or even medicine chest. And so, when we, today, design a man's line, the chances are it will be a successful line, if a woman comes along and says: "This is just what Johnny will adore." Whether Johnny really does, remains a moot question. He gets it, uses it, and has learned to like it, because he knows darn well, he better had.

On the other hand, for some years past, men HAVE become less rigid in their personal taste. Ever since they started to buy plaid jackets, brilliant ties and any or all of the famous play clothes, they have relaxed the old idea that only he is well groomed who is groomed without imagination. Men have evidently learned, that gaiety in clothes and apparel makes for comfort, for relaxation, for that subtle lift to the spirit without which the grimmer tasks of living remain unnecessarily grim, long after they have been performed.

In other words, it's about time, men had a little fun with their own grooming. More power to them. And more power to the manufacturers of toilet goods who are prepared to go all out with yet another line for men. Most power, though, we hope, to us, designers, who now at last have a chance to think not just in terms of daintiness and doodabs and pretty decoration, but rather in the much less ephemeral concepts of shape, construction and mechanical soundness.

Sex Hormone Creams Need Careful Study" an exhaustive search of the literature was made. This article read in part as follows: "The effectiveness of hormone-containing cosmetics depends upon the kind and amount of estrogen employed as well as the vehicle in which it is dispensed.

"From the available evidence, it appears that uncombined, natural estrogens are most suitable for local use. Emmons, for example, did not employ esters in his studies because it seemed well established that they are less effective percutaneously than free compounds. As early as 1936, Stafford noted that when estradiol benzoate is employed in a hormone cream, much higher dosages are required than when estrone is used. This has been confirmed by studies of Deanesly and Parker. They found that free estradiol gave excellent local results as shown by the feather response on capons.

"In studying the local effects of estrogen, Emmons made a comparison of the action of the natural hormone, estradiol, and the synthetic preparation, diethylstilbestrol. He noted that inunction of diethylstilbestrol produced effects similar to those obtained with the natural hormone, but even three times as much of the synthetic product did not give extensive feminization of capons' feather growth. This inefficiency was attributed to the slow absorption of diethylstilbestrol."

Although the Food & Drug Administration officially maintains the same attitude as expressed in a letter to us from Dr. Paul B. Dunbar, first published in our July issue, many feel that the Barr claims will almost certainly bring the F.T.C. into the field, which means trouble ahead in the hormone cream market.

Meanwhile, other new entrants are crowding the counters for recognition, including Hattie Carnegie with Active Ingredient Cream, 4 ounces, $15; American Beauty Hormone Cream, 2 ounces, $3; House of Hollywood's Creme d'Estro, 3 ounces, $5; Lutyce Estro 45, 3 ounces, $1.95; Delletrez' Delletron, 2 ounces, $3; and various others, private brands and nationally advertised numbers.

Cake Make-up Users Tripled

The use of cake make-up has more than tripled in the past four years, (from 12 to 42 per cent) according to the 4-year report of the Fawcett Beauty Reader Forum. This increase may account for the small but steady decline shown in the use of face powder (from 99 to 94 per cent) as well as the sizeable tumble in the rouge picture since 1941, (from 85 to 72 per cent) says this same source.

Other increases occur in the users of deodorants and anti-perspirants, astringents, bubble baths, colognes and toilet waters, leg make-up, hand lotion, nail polish base and top coats, perfume and shampoos.

In practically every classification there is a drop-off of syndicate store buying with the number of drug store purchasers rising, says Fawcett.

I can see more postwar jobs in our plant ... in a more effective folding carton

And now's the time to let Gardner-Richardson help you get that new folding carton under way . . . a package that will stimulate impulse buying, do a better selling job in tomorrow's mass displays . . . make more jobs in your plant.

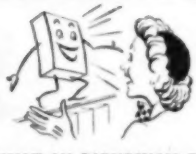
1

TOMORROW, MONEY WON'T BE BURNING a hole in pockets as it is, today. The optimists forget that Mom will be back in the kitchen where she gets no pay check. That Sis will be handling a vacuum sweeper instead of a welder's torch. To loosen their dollars will take some prying . . .

2

WHAT'S MORE, THERE'LL BE hundreds of products, new and old, competing on the nation's shelves for those dollars. To get *your* share . . . to keep *your* people busy . . . you'll want a folding carton that speaks out for you, does a real selling job.

3



YOU'LL WANT AN ECONOMICAL PACKAGE that grabs eyes, whets the buying appetite, says, "*I'm* the one to take home." You'll want a carton that says, "Look—I'm easy and convenient to handle, practical to use." And the time to start developing the carton to give you that sales advantage is right now.

GET THE JUMP ON COMPETITION. Be *ready* with that improved package. Turn the technical and merchandising know-how of Gardner-Richardson specialists loose on your problem. Let them show you what can be done to step up visibility in open displays, increase shelf salesmanship. Perhaps they can show you how to make your carton more convenient to use, give it a better opening or closure, suggest a better unit size. Let them prove to you that Gardner-Richardson's rigid specifications for paper, ink, plates, dies and printing assure economy-mass-produced cartons that are outstandingly uniform, colorful, crisp . . . better performing in high-speed filling machines. Write, today. Outline your needs. No obligation, of course.

The GARDNER-RICHARDSON Co.

Manufacturers of Folding Cartons and Boxboard, MIDDLETOWN, OHIO

Sales Representatives in Principal Cities: PHILADELPHIA • CLEVELAND • CHICAGO • ST. LOUIS • NEW YORK • BOSTON • PITTSBURGH • DETROIT

We KNOW *how our trained seals will perform*

The first requirement in a package seal is that it shall be a perfect seal.

The second—that it tests to the strength which meets the packaging requirement.

This machine, in Reynolds Laboratory, tests the strength of every package seal before it is approved for production.

There are twelve highly specialized departments in Reynolds completely equipped, modern packaging laboratory . . . dedicated now to the single aim of developing better packaging for the shipment of the matériel of War.

The needs of war have brought about packaging miracles! Undreamed of improvements have been made in rolling, laminating and sealing foil materials.

If you are interested in knowing how these developments can help you deliver your products to the public in better condition and with greater sales appeal than ever before, Reynolds technicians will be glad to help you.

For 25 years Reynolds have been the world's largest producers of foil!

Address inquiries to—Reynolds Metals Company, Reynolds Metals Building, Richmond, Virginia.

Reynolds Metals Company *Leads the way in Foil Packaging*

The Cosmetic Trend

Puzzled by an unexpected upward turn of their sales in the face of a comparatively limited rise in purchasing power retail executives are watching their luxury lines, perfumes included, for indications whether consumers are not threatening to indulge after all in a buying spree of whatever can be found upon the counters. What toilet goods men would like to know is what effect such a development would have upon the price levels of their assortments.

Not much can be learned from events in the Southern resort markets, although Miami counters have been running ahead as much as twenty per cent over last year. There is no denying, though, that stores in the North have had exceptionally good results with their higher-priced offerings during advertised promotions early in March.

While there is not much of a problem in such an upgrading in the case of stores which have habitually sold a substantial proportion of high priced goods, it may develop into one in stores which have dealt chiefly in lower priced goods. Many stores will attempt to improve the top level of their assortments, stepping warily, though, in case the expected bull market should not come off. In any case there is plenty of evidence that toilet goods counters are heading for an active Spring season, offering exceptional opportunities for expanding sales in above medium priced lines.

Buyers are taking the conservative view that, if customers want foreign perfumes the counters will supply them, but that they do not expect them to make a real contribution to sales volume. As was the case after the last war, domestic products have gained added importance and there are enough good American perfumes in the market to fill the demand.

It is noticed with interest that nail polishes and lipsticks are offered in growing color ranges but, at present indications, only the very best counters will show complete lines. The tendency is to concentrate upon the best sellers of a large variety of brands to satisfy the widest numbers of customers.

Of interest to manufacturers, planning package changes, is the opinion that in view of present personnel problems, a large number of new packages may tend to slow up performance at the counters. Where design changes are made they should retain at least sufficient of the old package to aid finding the item upon the shelves. Drug stores faced by the need of compressing their cosmetic counters to make room for other articles are particularly affected.

Nostalgia

We happened to run across an old Listerine ad the other day and immediately were lost in the past. This happened to be the priceless "Often a Bridesmaid but Never a Bride" one which went on "Edna's case was really a pathetic one. Like every woman her primary ambition was to marry. Most of the girls of her set were married—or about to be. Yet not one possessed more grace or charm or loveliness than she.

"And as her birthdays crept gradually toward that tragic thirty mark, marriage seemed farther from her life than ever.

"She was often a bridesmaid but never a bride.

Then, after a decent interval marked by three ***, it continued, "That's the insidious thing about halitosis . . . . . "

As we read we thought of those other headlines of that era. "She Stood on the Bridge at Midnight" led up to another, "that's the insidious thing about halitosis."

"Again She Ordered Chicken Salad" led up to we don't remember what, but it certainly succeeded in killing chicken salad as a restaurant number for so many of the gals were intimidated by the headline that they didn't dare order the stuff.

Then there were, "They Laughed When I Sat Down at the Piano" and also "When I Spoke to the Waiter in French." Self-improvement was the order of the day in what, from this distance, looks like a very naive world.

Summer Legs

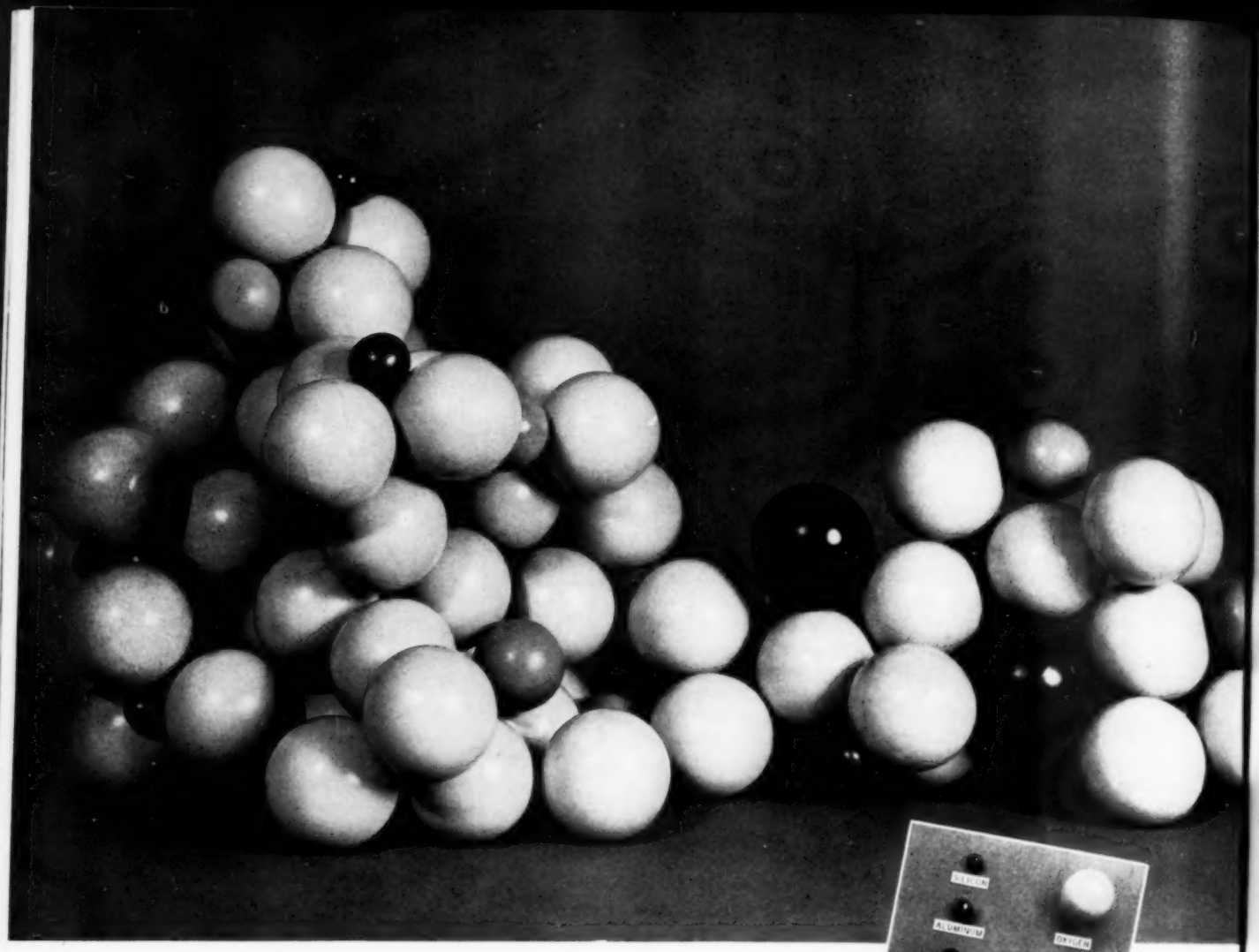
Cosmetic stockings have been gaining in popularity and consequent sales each succeeding summer. There are many reasons for this, of course, such as the fact that formulas have improved so that the preparations are easy to apply, enhance the appearance of the legs, are pretty much water-resistant and rub-off-resistant, cool and flattering during the warm months, economical to use, and so on. But when the president of a hosiery manufacturing company advises women to go barelegged during the summer months because he feels it is patriotic, that really gives the green light to cosmetic stockings, since barelegs are rarely attractive enough to go out unadorned.

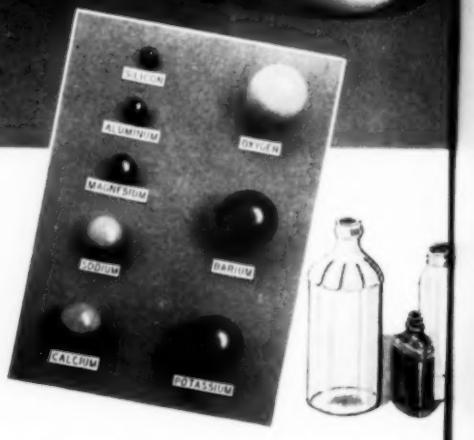
Elizabeth Arden's Velva leg film is apparently still in the popularity lead. Three shades are being featured this season in Velva Leg Film—Sun Beige, the lightest, is best with black and dark shades; Sun Bronze, a tawnier tan, is good with bright, vivid colors, and Sun Copper, a still deeper tone, is interesting with sparkling whites and soft pastels. New and interesting shades are also promised by other manufacturers.

Method of application is still most often the reason for dissatisfaction on the part of the customer. Women are impatient and do not take the time to learn how to apply the preparations. It takes practice to bring about satisfactory results and this point should be stressed on labels. Method of removal should also be specified and made as simple and effective as possible. Complete defuzzing and grooming of the legs is also an important factor.

New Children's Line

Parfait Sales of Chicago is planning to introduce a line of toiletries designed especially for the sub-teen and teen-agers some time in May or early June. It is a line of personal "dainty-aids" for the younger generation of girls—the youngsters anywhere from seven to the teens, called "Sugar 'n Spice." The products appear in colorful packages, and, as an additional fillip, the direction-labels are in lilting verse. The products include cologne, bubble bath, hand lotion, liquid shampoo, powder mitt, soap, and a light lip pomade. These are offered individually and in attractive gift sets. The children's wear department of a Chicago State Street store will introduce the "Sugar 'n Spice" line and it will also be featured in toiletries departments.





MAGNIFIED 75,000,000 TIMES GLASS MIGHT LOOK LIKE THIS

THE complex "space model" of glass you see above was constructed by members of Armstrong's Research Laboratories. It is their conception of what a minute sliver of ordinary container glass ought to look like if magnified 75 million times!

They say "ought to" because they can't actually look through the powerful X-ray equipment that does the magnifying. But through the use of X-ray analysis, plus some pretty complex mathematics, they know that the model above shows accurately the probable arrangement of atoms in the piece of glass they analyzed.

Each of the spheres in the model represents one atom of an element used in glassmaking. In this particular piece of glass there are silicon atoms from sand, calcium atoms from lime, sodium atoms from soda ash, and atoms of aluminum, magnesium, potassium, barium, and oxygen. Since most glass-making ingredients are oxides, it is not surprising that there are a large number of oxygen atoms in finished glass.

With the aid of a model like this, Armstrong's glass scientists are able to theorize on a great many of the physical and chemical properties of glass. From the size of the atoms, and the manner in which they are joined to other atoms, ideas are obtained about the melting processes, about density, and even about the light transmission and other properties of the glass represented.

For further interesting facts about the skill and experience that go into the making of Armstrong's fine glass, send for your free copy of "Men and Glass." Address Armstrong Cork Co., Glass and Closure Division, 3304 Prince St., Lancaster, Pa.

ARMSTRONG'S GLASS

and **ARMSTRONG'S CLOSURES**

Manicure Sensation

One of the most exciting things to cross the beauty path in a long time is a new type of preparation designed to speed the drying of nail lacquer after a manicure. It is an oily liquid which when spread over the last application simply leaves a thin oily film over the lacquer that is left on for a minute or so and then wiped off. The nail lacquer is set and dry under it—no more waving hands in mid-air coaxing lacquer to hurry and dry—and above all it helps to cut down on last minute smudges and nicks. And as if that weren't enough to expect of any one product, it is also felt that this preparation possesses the desirable virtue of helping to soften the cuticle.

Probably the first of these to hit the market was "Nail-Dri" by the Rilling Arnao Co. of Minneapolis, Minn. "Nail-Dri" is packaged to sell for 50 cents per bottle holding ¼ ounce. According to Rilling, it is designed to dry nail lacquer seven times faster than possible heretofore. La Cross came close on the heels of "Nail-Dri" with its "Instant-Dri," and then Revlon with "Oil-Fast," a similar product. Trailing a bit behind is Chen Yu with its "Fast-Dri," and Northam Warren with Cutex "Quick Dry" and Peggy Sage "Oil Dry." The La Cross, Revlon and Chen Yu products all retail at 60 cents for ½ ounce. Cutex is priced at 39 cents and Peggy Sage at 50 cents.

The products are all fundamentally alike and the procedure in each case is the same: After the last coat of nail lacquer has been applied, a few moments should elapse. Then the nail drier is stroked lightly over each fingertip. Then another pause to permit it to set the polish. It can then be removed by gently wiping surface oil off with the ball of the thumb, a piece of cleansing tissue, or cotton. And presto! the lacquer is set and dry.

Now here is a cosmetic product that can be said to work like magic right under your eyes!

Cosmetics and Fashion Colors

Chicago was the first city to witness an unusual series of fashion shows which Carson, Pirie & Scott, presented to the public in connection with the Color-Spectrograph which has been created by Helena Rubinstein. This color-selecting device is designed to bring cosmetics into closer harmony with fashion. Five hair types, blonde, red, medium brown, brunette, and silver grey, have been analyzed and for each the laboratory has selected individual contrasting colors (subtle or dramatic), self-harmony colors, and complementary colors for fashion fabrics and cosmetic make-up. Each type is then shown on a Color-Spectrograph with a careful arrangement of the correct fabric shades and make-up in perfect harmony. Although the Color-Spectrograph outlines definite colors for each type of person, it does not limit one's range of colors. It really helps anyone wear more colors with success, by showing all the flattering shades of these colors, and by outlining correct make-up to co-relate the whole picture. Forstmann, Juillard, Botany, Celanese and other leading fabric houses cooperated in this development in costume coordination.

Drug Baby Line

Although we've been conscious of the increasing number of cosmetic baby lines, we think that probably Nyal is about the first to do a drug baby line. These observations are occasioned by the report that "Tender Age," the baby line of pharmaceuticals, introduced by the Nyal Co., Detroit in March 1944 has now been expanded to include nine items according to E. P. Matthiessen, president.

Additional items are being prepared for distribution among the company's 7,000 Nyal stores. At present the line includes a Chest Rub, Cough Syrup, Teething Lotion, Diarrhea Compound, Castoria, Baby Oil, Laxative, Shampoo and Vitanips, a special Vitamin A and D combination similar to the capsules recommended by State and Health Welfare Groups.

Top of the Morning!

To many thousands of well groomed men, a Mollé brushless shave is the sure fire way to start the day right. Molle's special face-protective film has more body and substance than light, fluffy cream. It gives the razor something to ride on.

Mollé Brushless Shaving Cream is made by the Centaur Company Division of Sterling Drug Inc., New York. And here's a case where the manufacturer hasn't been content with just a fine product. The package is a "natural," designed to soothe early morning ruffled spirits. The hob-nailed jar is easy to hold, even when hands are wet and slippery. It is also wide and low, unlikely to tip over. The handsome, colorful closure is a quick-action Crown Lug Cap. There's no groping for threads. It seals fast and sure. Here, indeed, is a product and a package to make every morning a happy one.

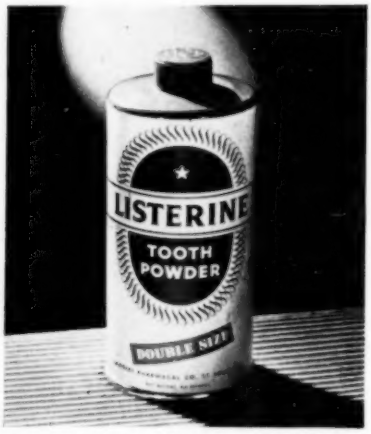
CROWN CORK & SEAL COMPANY

Closure Division • *Baltimore 3, Md.*

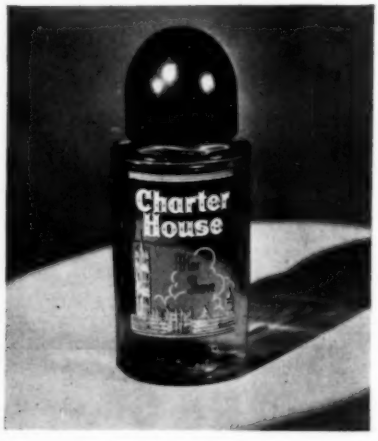
WORLD'S LARGEST MAKERS OF METAL CLOSURES

CROWN CLOSURES

Sportsman shaving lotion and cologne fit into a handsome glazed leather cigarette box, tooled in gold, which will serve as a travelling case and later as an accessory for office desk or living room table.



Pourability is what the new snap top has and durability is what the laminated paper body and plastic top plus metal base give the new improved Listerine tooth powder container, which holds 10 per cent more powder than the old style oval.



Charter House is offering a men's line of toiletries which includes shaving lotion and cologne. Charter House talc, shave bowl and hand soap will be added shortly. Attractively packaged, the fragrance is clean and masculine.

Charles S. Welch Award

The Charles S. Welch Memorial Award was awarded to Prince Matchabelli on two of its packages, the Duchess of York ceramic jar for foundation cream, and the plastic case for Duchess of York rouge. The Jury of Award consisted of C. A. Browne, editor of Modern Packaging, chairman; Elmer Sheets, editor of BEAUTY FASHION; Hildegarde Fillmore, beauty editor of McCall's Magazine; John W. McPherrin, editor of American Druggist; Sarah Pennoyer, vice president of Bonwit Teller; William Murtha, divisional merchandise manager of Bloomingdale's; Elise E. Ruffini, A.M., Associate Professor of fine arts in Teachers College, Columbia.

Just Plain "Dynamite"

Maybe it will take "Dynamite"! to change the entire color picture in make-up which seems to be going around and around in an orgy of pinks! Dynamite is Revlon's newest shade. It is an unadulterated red-red, a clean, clear red, full of punch and life. The kind of versatile red that just had to come along sooner or later. This explosive cosmetic color for lips, fingertips and toe-tips, has been designed to complement the summer bare costumes as a dramatic color accent. Revlon also has "Sheer Dynamite" face powder, a warm, wearable shade. The packages are unique in that they make use of photographs, which is rather rare.

New Perfume

A new perfume is always a gay diversion and this one is really "Gay Diversion" introduced by Parfums Hartnell. It is offered in the same sizes and at the same prices as White Shoulders and Menace, namely $18.50 an ounce retail, and in four sizes with a small purse flacon at $5. There are three sizes in Cologne Plus, $2.75, $5.00 and $8.50. The new Hartnell perfume is packaged in a band box of black lace over deep peach satin. The fragrance itself is delightfully diverting!

Hair Preparations

"U. S. citizens spend over $50,000,000 annually to keep their hair clean and manageable," according to "Tide." "Each month over 7,000,000 families purchase either one of about a dozen advertised brands of shampoo, oil or tonic including Drene, Fitch, Halo, Kreml, Wildroot, Vaseline, Vitalis, or one of a score of unadvertised preparations," the report continues. (Our own figures in these classifications indicate a total volume of over $84,000,000).

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"Ac-cent-tchu-ate THE POSITIVE"

A negative, good-enough-to-get-by approach to packaging rings few cash registers. 42 Products, Ltd., like many another alert packer, Eliminates the Negative in consumer appeal by topping their package with a lithographed Aridor Cap.

If the Cap on *your* package is a "Mr-In-Between" —neither outstandingly bad nor especially useful in helping to capture customer interest—you need an Aridor Eyedealized Metal Cap suggestion. Ask for it at once!

The ARIDOR Co.

3428-40 WEST 48TH PLACE - CHICAGO 32

A Division of Ball Brothers Company

CLEARSITE* CONTAINERS *are* (PLASTIC)

. . . no waste in Space or Breakage
. . . no excess bulk or weight

- SHATTERPROOF
- SEAMLESS
- FEATHERLITE
- COLORFUL

— but the best dollar-value in eye-appeal, *plus* shatter-proof protection to contents that money can buy, or ingenuity devise. From three-eighths of an inch to inch-and-a-half diameters, in the height your product needs, full-dress merchandising in lustrous CLEARSITE plastic vials, provides true *economy* and *practical* packaging.

Why not send a sample of your present package and we will submit a CLEARSITE suggestion?

*Reg. U. S. Patent Off.

Our Package-Engineering Staff will gladly work with you.

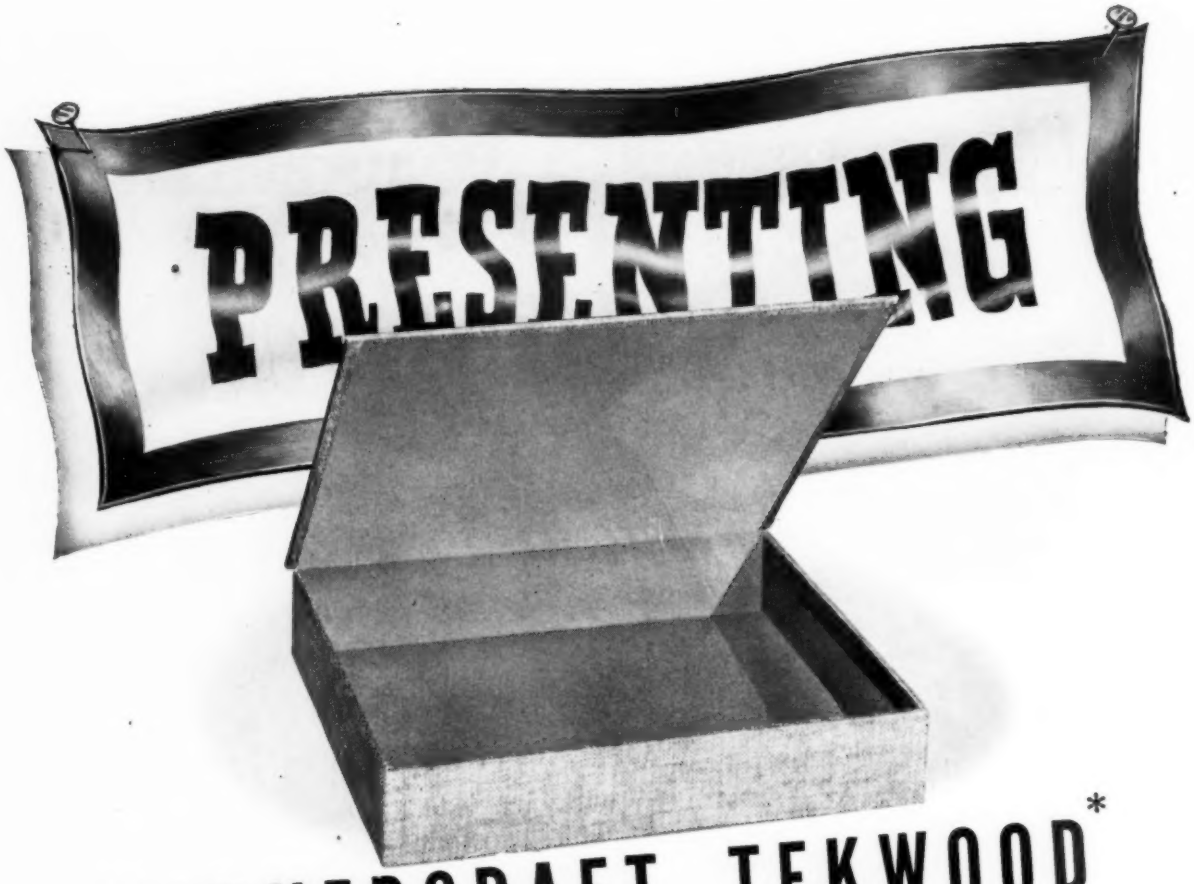
CELLUPLASTIC CORP.

CELLUPLASTIC CORPORATION

EXTRUSION AND INJECTION MOLDERS

60 AVENUE L NEWARK, N. J.

WEST COAST REPRESENTATIVES CONTAINER SERVICE CO., 1266 North Western Avenue, Los Angeles 27, Cal.



WARNERCRAFT TEKWOOD*

for Post-War Packaging

WHAT IS IT?

One of the many packaging improvements designed and developed by experienced Warnercraftsmen for post-war use, Warnercraft Tekwood* is a wood laminated with fiber material. Light in weight as cardboard yet many times as strong, it is suitable and practicable for containers from jewel-box to suitcase size.

WHAT WILL IT DO FOR YOU?

Tekwood* is adaptable to any type of covering making it possible to design attractive, eye-appealing boxes that may be re-used long after the original contents are exhausted. Its strength and lightness mean easy and safe shipping for your goods . . . and, because it can be produced by mass production, manufacturing costs are low yet the finished box is tops in quality.

Constantly in touch with the newest in design and materials, Warners are ready now to design the package to fit your needs . . . to complement tomorrow's finest products.

*REG. U.S. PAT. OFF.

Makers of set-up and folding boxes of all types, transparent acetate containers, hand made specialties, counter displays and dispensers.

THE WARNER BROTHERS COMPANY

Main Office and Factory: 325 Lafayette Street, Bridgeport, Conn.
New York Sales Office: 200 Madison Avenue, New York, N. Y.

WARNERCRAFT

"THE FINEST WORD IN PACKAGING"

Drugstore items in cans are free from breakage and spoiled labels... and cans save space, protect products, boost sales

● "You can take my word for this, when it comes to packaging drugstore items, no container can equal the can. For us manufacturers, and druggists and housewives, too, cans are so *trouble-free!*

"Cans are safe to handle with wet, slippery hands. They don't break. Their labels can be lithographed right on the cans...no danger of wrong dosages caused by smeared or washed-off labels. And cans protect contents from bathroom moisture.

"Being light and compact, cans are easy and economical to pack and ship. And they save space on busy drugstore shelves, where their smart and colorful labels make them stand out, catch the eye, boost sales.

"I say...let's give the public what it wants! As soon as they're available again, I'll pack my goods in steel-and-tin cans!"

★

CONSUMER AD CAMPAIGN GROWS!

More then 34,000,000 printed messages now appear each month in LIFE and ten other national magazines, and in Sunday supplements from coast to coast. Full-page, full-color ads tell shoppers everywhere about the many advantages of the steel-and-tin can.

REMEMBER THESE

5 MAJOR REASONS

Why Housewives Prefer
DRUGSTORE ITEMS IN CANS

1. Cans are safe when handled with wet hands.
2. Labels lithographed on cans can't drop off.
3. Cans protect contents from bathroom moisture.
4. Cans are more convenient.
5. Cans are more economical.

CAN MANUFACTURERS' INSTITUTE, INC., NEW YORK

NO OTHER CONTAINER PROTECTS LIKE THE CAN

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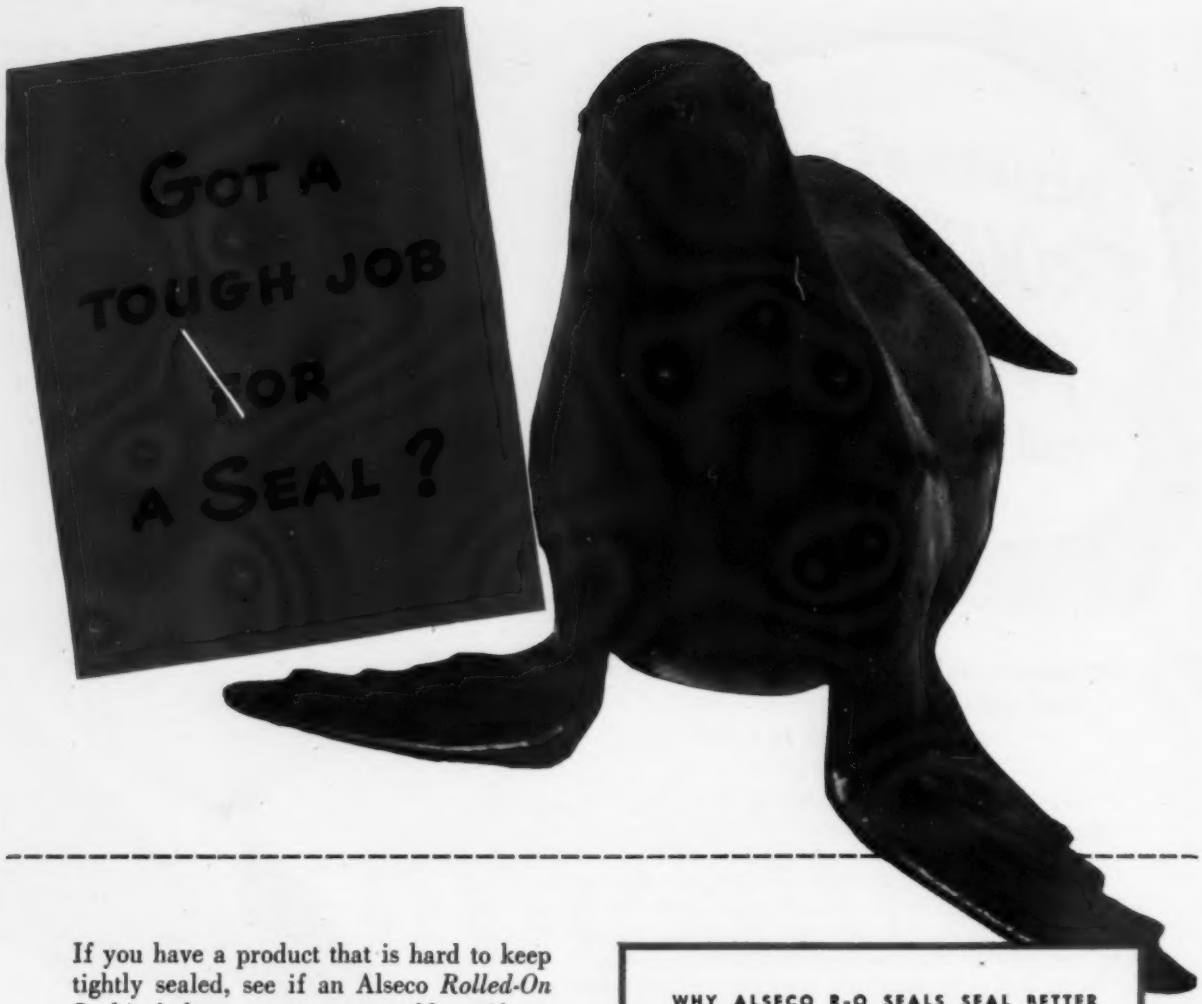
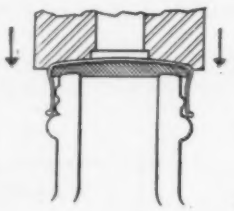


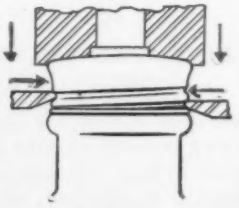
If you have a product that is hard to keep tightly sealed, see if an Alseco *Rolled-On* Seal isn't the answer to your problem. Alseco Seals are applied by a unique method that greatly reduces leakers and breathers. Proof of that is plentiful.

The war has temporarily limited the availability of Alseco Seals, but that doesn't stop you from finding out all about them and running tests on sealing efficiency. Do that now and, postwar, your sealing problem may be answered.

WHY ALSECO R-O SEALS SEAL BETTER



1. Plain-skirted Alseco Seal is seated squarely on container. Under stationary top pressure, container lip is embedded in cap liner evenly all around, effecting the seal.



2. While the seal is thus held under pressure, threads are Rolled-On to conform exactly with threads on container. Each seal is tailormade, fits perfectly, seals tighter.

ALSECO

TAILOR-MADE OF ALCOA ALUMINUM

SEALS AND SEALING MACHINES

ALUMINUM SEAL COMPANY • 1323 THIRD AVENUE • NEW KENSINGTON, PENNSYLVANIA

SUBSIDIARY OF ALUMINUM COMPANY OF AMERICA

Check the VIPACO Products that serve you!

	WRAPPING & SHIPPING	HEAVY PACKING	MANUFACTURING	INDUSTRIAL	MAINTENANCE	EXPORT & IMPORT	APPAREL	DRUG & COSMETIC	FOOD & LIQUOR	TOYS	PUBLISHING	MISCELLANEOUS
BOGUS PAPER	✓	✓		✓		✓		✓		✓	✓	
CARDBOARD, CHIPBOARD			✓	✓			✓			✓	✓	
CORRUGATED (Cartons, Rolls, Sheets)	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
COTTON TWINE	✓	✓	✓	✓			✓	✓	✓	✓	✓	
CRYSTAL TISSUE	✓		✓	✓			✓	✓		✓		
CRYSTALITE TISSUE	✓		✓	✓			✓	✓		✓		
DRESS COVERS			✓				✓					
DRINKING CUPS				✓	✓		✓	✓	✓	✓	✓	✓
EXPORT PAPERS	✓	✓	✓			✓						
FILMONIZE TAPE			✓	✓	✓	✓		✓	✓	✓	✓	✓
FLEXPAK	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
FURNITURE BOGUS	✓	✓	✓	✓				✓			✓	
GLUE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
"VIPACO" GUMMED TAPE Plain, Colored, Printed	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
GUMMED TAPE MACHINES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
KRAFT WRAPPING	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
MANILA			✓				✓					
MARKING PAPER			✓				✓			✓		
NEWSPAPER			✓		✓	✓	✓			✓	✓	✓
OIL STENCIL BOARD	✓	✓	✓	✓		✓	✓	✓	✓	✓	✓	
PAPER CUTTERS	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
PAPER TOWELS					✓		✓	✓	✓	✓	✓	
PATTERN PAPER			✓				✓			✓		
PRESSURE SENSITIVE SEALING TAPE	✓	✓		✓	✓	✓						✓
PROTECTION PAPER	✓	✓	✓	✓		✓		✓				
SHIPPING ROOM SUPPLIES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
STERLING TREAD GUMMED TAPE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	
SWEEPING COMPOUND			✓		✓		✓	✓		✓	✓	✓
TISSUE (White, Manila, Silver)	✓		✓	✓			✓	✓		✓		✓
TOILET PAPER (Rolls, Sheets)					✓		✓	✓	✓	✓		✓
TWINES	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
WATERPROOF PAPER	✓	✓	✓	✓		✓						
WAX PAPER	✓	✓	✓	✓		✓	✓	✓	✓			✓
WRAPPING PAPER	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓

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The VIKING PAPER COMPANY INC.

542-544 WEST BROADWAY • NEW YORK 12, NEW YORK

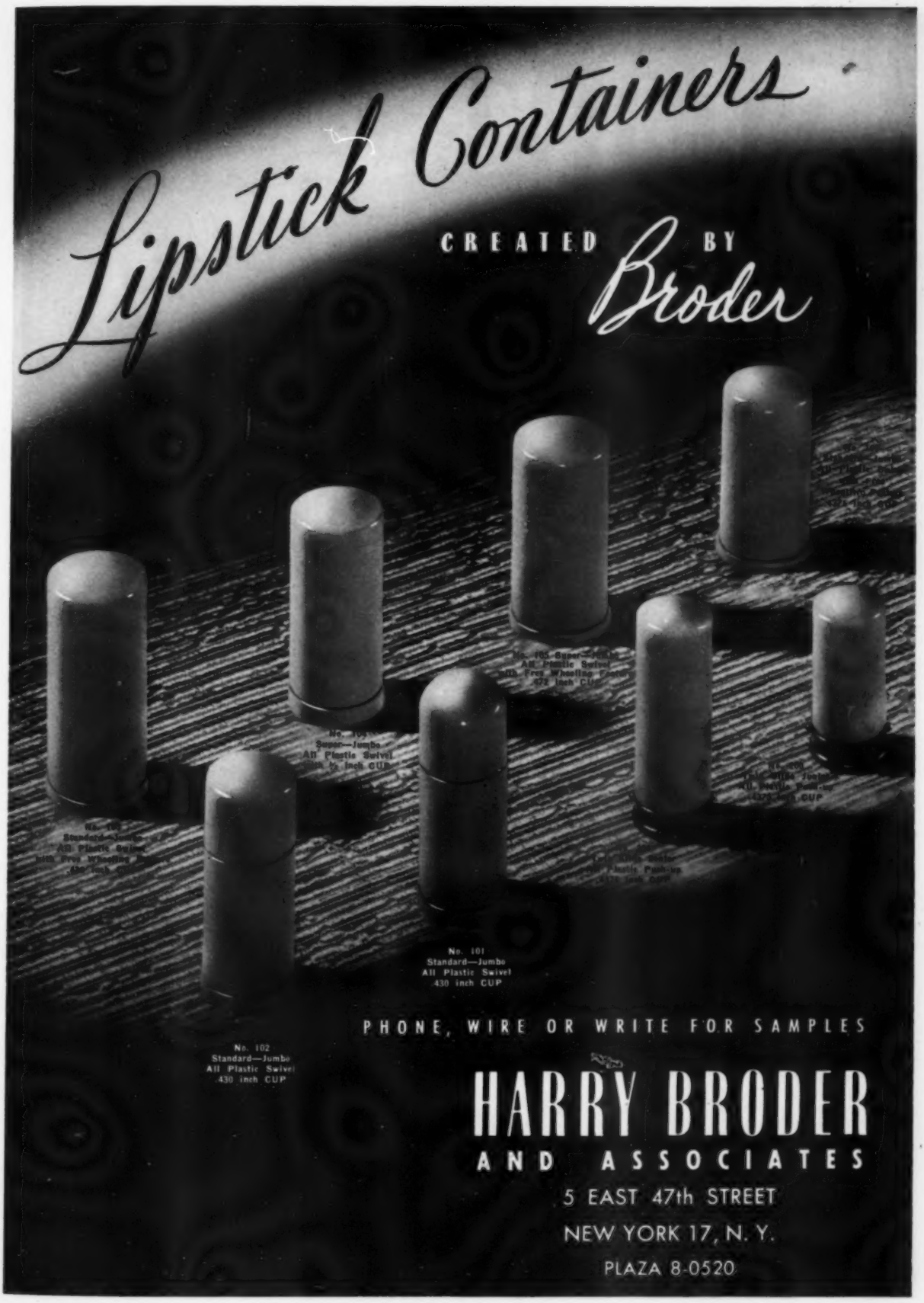
THINGS TO COME

Of the many things that have been promised for postwar, one is certain . . . better packaging. You'd be surprised how many manufacturers are planning right now to improve their packages. They know that the design and appearance of the package will play a major role in postwar selling.

If your product goes into glass, the quality of your containers becomes an increasingly important factor. You may find it helpful to consult with us now on your plans for postwar packaging. Since 1889 we have been making glass containers that are known for their outstanding excellence.

CARR-LOWREY GLASS CO.

Factory and Main Office: Baltimore, Md. • *New York Office:* 500 Fifth Ave.
Chicago Office: 1502 Merchandise Mart


Lipstick Containers
CREATED BY
Broder
No. 101
Standard—Jumbo
All Plastic Swivel
430 inch CUP
No. 102
Standard—Jumbo
All Plastic Swivel
430 inch CUP
PHONE, WIRE OR WRITE FOR SAMPLES
HARRY BRODER
AND ASSOCIATES
5 EAST 47th STREET
NEW YORK 17, N. Y.
PLAZA 8-0520

MERITSEAL

Outstanding Beauty Popular Price

Meritseal is by far the most beautiful cap in the popular price field. Trim and smooth . . . no visible threads . . . handsomely lacquered or lithographed in color . . . its appearance is fully in keeping with the finest cosmetic products.

The outstanding good looks of Meritseal result in part from its novel construction. Its construction also gives Meritseal several mechanical advantages. Meritseal caps rotate freely when applied to a jar, thus saving time on the production line. They seal air-tight, yet are easy to remove because there is no wedging action.

In every respect, Meritseal is a highly satisfactory cap for cosmetics. Scores of cosmetic manufacturers have standardized on Meritseal and are delighted with it. Samples, full information and prices will be sent gladly on request.

CROWN CORK SPECIALTY CORPORATION
DECATUR, ILLINOIS
Division of Crown Cork & Seal Company

Novel Construction

Meritseal consists of a shell fabricated from sheet metal, into which is inserted a suitable liner and a thread made from a non-corrosive strip of metal. The thread is formed into a ring and assembled into the shell, holding the liner in position. The lower edge of the shell curves inward, locking the thread in place.

Special Thread

In the Meritseal thread, the metal is not drawn or stretched. The top ledge is flat, engaging the under side of the glass thread at its lowest point. This allows the liner to seat itself evenly and prevents the wedging condition which occurs so often with conventional screw caps.

Seals tightly . . easily removed

Meritseal Caps are easy to apply and make an absolutely air-tight seal. Yet, because they rotate freely on the glass threads, they are always easy to remove.

"The bigger the family—the better the service"

THERE'S nothing like a big cooperative family for all-round service! With our facilities, experience and technical knowledge in handling all kinds of orders, we can give you a quick impartial analysis of *your* packaging problem. Result? The *right* package for your product.

Continental *is* a big family offering a wide variety of packages—metal containers, liquid-tight paper containers and cups, fibre cans and drums, steel pails and various heavy duty containers.

We're meeting the needs of America's armed forces now. But keep your eye on Continental! And on Continental's trademark, too! The Triple-C stands for *one* company with *one* policy—to give you only the best in quality and service.

Tune in: "REPORT TO THE NATION" *every Saturday over coast-to-coast CBS network*

Continental Fibre Drums—Continental has a full line for shipping dry products, resins, rosins, asphalt, etc.; also grease and other semi-liquids. Continental drums cover a wide range of sizes; "Stapak" drums (illustrated) from 2 to 32 gal.; "Fiberpak" drums from ¾ gal. to 67 gal.; "Leverpak" drums from 12 to 75 gal.; Special drums from 15 to 55 gal. capacity.

CONTINENTAL CAN COMPANY, INC.

CONTINENTAL PAPER DIVISION

FIBRE DRUMS The Container Co., Van Wert, Ohio

LIQUID-TIGHT FOOD CONTAINERS — Boothby Fibre Can Co., Roxbury, Mass.

PAPER CUPS AND FOOD CONTAINERS — Mono Containers, Newark, N. J.

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Headquarters: 330 W. 42d St., New York 18, N. Y.

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Skill . . .

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In Its Twenty-Sixth Year of Service

Plaskon Closures ARE STOPPERS IN MORE WAYS THAN ONE!

THERE are three major features which distinguish Plaskon Molded Color for closures: utility, economy, and attractiveness.

Plaskon molding materials are plastics that are especially resistant to the chemical and physical action of a wide variety of products that must be packaged. Plaskon is completely impervious to the effects of alcohol, acetone, or other common organic solvents. It is not affected by oils, fats or greases. Because it is odorless, tasteless and inert, it has no effect upon any products with which it comes into contact.

Plaskon can be molded in large quantities at very economical prices. Distinctive designs and shapes can be secured to give new individuality to packages.

Plaskon is available in a wide range of beautiful, permanent colors that improve the appearance of any container, catch the eye and help make sales. We can give you helpful assistance in suggesting designs, qualified Plaskon molders, and technical advice so that you can efficiently adapt Plaskon Molded Color to your manufacturing and sales programs.

PLASKON DIVISION, LIBBEY-OWENS-FORD GLASS CO., 2110 Sylvan Ave., Toledo 6, Ohio
Canadian Agent: Canadian Industries, Ltd., Montreal, P. Q.

PLASKON
TRADE MARK REGISTERED
MOLDED COLOR

BRIDGEPORT...

For the past two years our facilities have been devoted almost exclusively to the production of war materials. We have been fortunate, in that we have been able to handle this work on the same equipment used for our regular peace time products, and, consequently, when material again becomes available for lipstick containers, vanity cases and other metal cosmetic items we will be prepared to start producing our regular line immediately. If you too are planning your post war program, we will be glad to assist you.

THE BRIDGEPORT METAL GOODS MFG. CO.

Established 1909

BRIDGEPORT 'PHONE: BRIDGEPORT 3-3125 CONNECTICUT

VANITY CASES • ROUGE CASES • PASTE ROUGE CONTAINERS • LIPSTICK HOLDERS (ALL TYPES) • POWDER BOX COVERS • EYEBROW PENCIL HOLDERS • BOTTLE CAPS • JAR CAPS • METAL NOVELTIES TO ORDER

Over ⅓ Century of Dependability

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- JARS
- CLOSURES

...and remember, Ceramic coloring and lettering at our GLASSCRAFTERS Division

W. BRAUN CO.

300 N. CANAL ST. . . . CHICAGO 6, ILL.

EMPIRE BOX CORPORATION

Incredible— but True!

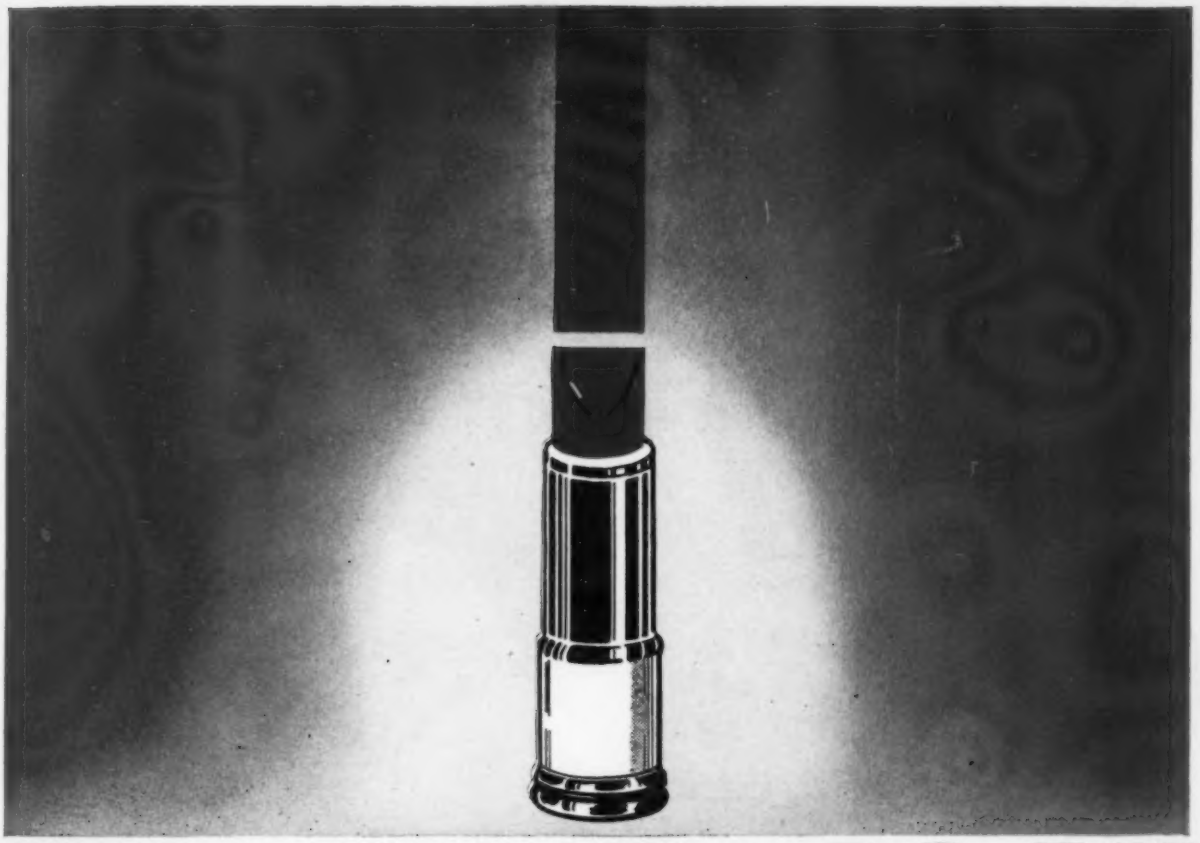
SHEET METAL GOODS

SPRINKLER TOPS

CORK TOPS DOSE CAPS

CONSOLIDATED FRUIT JAR COMPANY

NEW BRUNSWICK, N. J.



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ONE OR A COMPLETE LINE OF
QUALITY TIME TESTED
PRIVATE LABEL COSMETICS

HELFRICH PRIVATE LABEL COSMETICS

Rouge	Cake Makeup
Cream Rouge	Mascaras
Lipsticks	Solid Perfumes
Eye Shadow	Cream Cologne
Face Powder	Face Creams
Sachets	Lotions
Etc.	Etc.

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• HELFRICH LABORATORIES OF N. Y., INC., 151-163 WEST 26TH ST., NEW YORK • CABLE ADDRESS: HELFLABS, NEW YORK . . . CHICAGO . . . TORONTO

HELFRICH Laboratories

A MODERN TOOL FOR MODERN INDUSTRY

-MEGATHERM*-ELECTRONIC HEAT

Here is high-speed uniform heat—precision controlled and directed—offering tremendous possibilities for new products and new processes . . . for faster, more efficient production . . .

That's Megatherm—high-frequency electronic heating at its best—a modern tool with uses as broad as industry itself.

In the processing of plastics, foods, drugs, candy, paper, textiles, wood products, and in printing, book-binding . . . in the surface hardening of metals, brazing, soldering, and annealing . . . to mention only a few of an endless number of possible applications.

Megatherm is available in a range of compact, efficient models—powers from 3 kilowatts to 100 kilowatts. One of these models is right for your work.

Now, while you are planning for the future, is the time to get the story on Megatherm—learn how it will speed your production—cut your costs—make new designs—new products and new materials possible. Write for data.

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Federal Telephone and Radio Corporation

*Reg. U. S. Pat. Office

INDUSTRIAL ELECTRONICS DIVISION

AN IT&T ASSOCIATE

Newark 1, N. J.

Big Bottle: "He sure is, Tiny! It's hard for us bottles to loaf in stock rooms when he starts buying us up!"

Little Bottle: "You mean he buys us in ALL sizes, shapes, and quantities, with or without caps?"

Big Bottle: "That's right. ANY size or quantity. We're containers, you know, and we're darn usefull"

That's the story, folks! Why clutter up your valuable space? Get some good, hard cash for that useless accumulation of bottles, caps, and assorted containers, glass or otherwise.

Call us right now! Cash in on your pile of bottles today!

glass container & cap outlet co.

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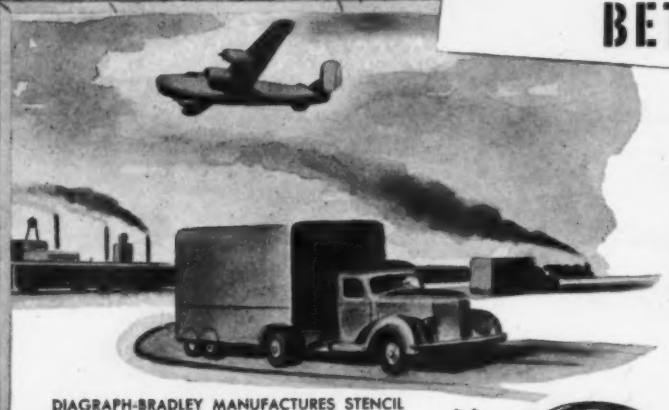
BETTER INKS
BETTER DELIVERIES



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DIAGRAPH-BRADLEY non-settling, non-clogging Stencil and Marking inks have been developed through 50 years of research to do a better marking job. A DIAGRAPH-BRADLEY ink is manufactured for every marking need in black and colors, meeting all Government performance specifications.

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Letter sizes ½", ¾", ⅜", 1⅛", 1½" and 1¾".

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See Classified Section-Telephone Book • STENCIL CUTTING MACHINES

WORLD'S LARGEST AND OLDEST MANUFACTURERS OF STENCIL CUTTING MACHINES

STAINLESS STEEL MIXING *and* STORAGE TANKS

Depend on San-I-Tanks for safe handling of all your liquids and chemical preparations. The ideal tank for storage, mixing or processing purposes. Built by tank specialists, San-I-Tanks incorporate every time saving, money saving feature. For special tank adaptations consult our engineers for their recommendations, no obligations, of course.

Government restrictions prevent deliveries at present of stainless tanks for the processing of cosmetics and toiletries. We invite your inquiries for delivery at future date

√CHECK THESE PRODUCTION and EFFICIENCY INCREASING FEATURES

Fabricated throughout of 18-8 Stainless Steel, No. 4 polish on inside, bright finish outside. San-I-Tanks are built to last.

All inside welds are ground smooth and polished. San-I-Tanks are built right throughout.

San-I-Tanks incorporate special self-draining features with specially formed bottoms sloping to the front.

San-I-Tanks are rust-resistant, easy to keep clean and sanitary because of their Stainless Steel construction.

Many special extras available in stock for San-I-Tanks such as covers, motors, agitators, etc.

Built by craftsmen with years of tank building experience—you are assured of years of trouble free, efficient service when you insist on San-I-Tanks.

METAL-GLASS PRODUCTS CO. Dept. D Belding, Mich.

Delicious SOON in bouillon cups!

Delicious NOW in canteen cups!

. . . and the deliciousness of both is protected by metal foil!

YOU bet this steaming hot bouillon hits the spot! In any man's language, it's *good!* And its unbeatable, delicious flavor is protected by the little Trans-Pac metal foil package that carries it overseas and right up to the front lines. These compact little packages do their war job admirably well—protecting the precious bouillon powder from heat, moisture, germs—keeping it safely edible up till the minute it's opened for "chow".

Whether it's metal foil or any one of many other superior packaging materials, Trans-Pac can plan your packaging needs now. In addition to our own staff, we work closely with the engineering and research divisions of the leading manufacturers of packaging supplies.

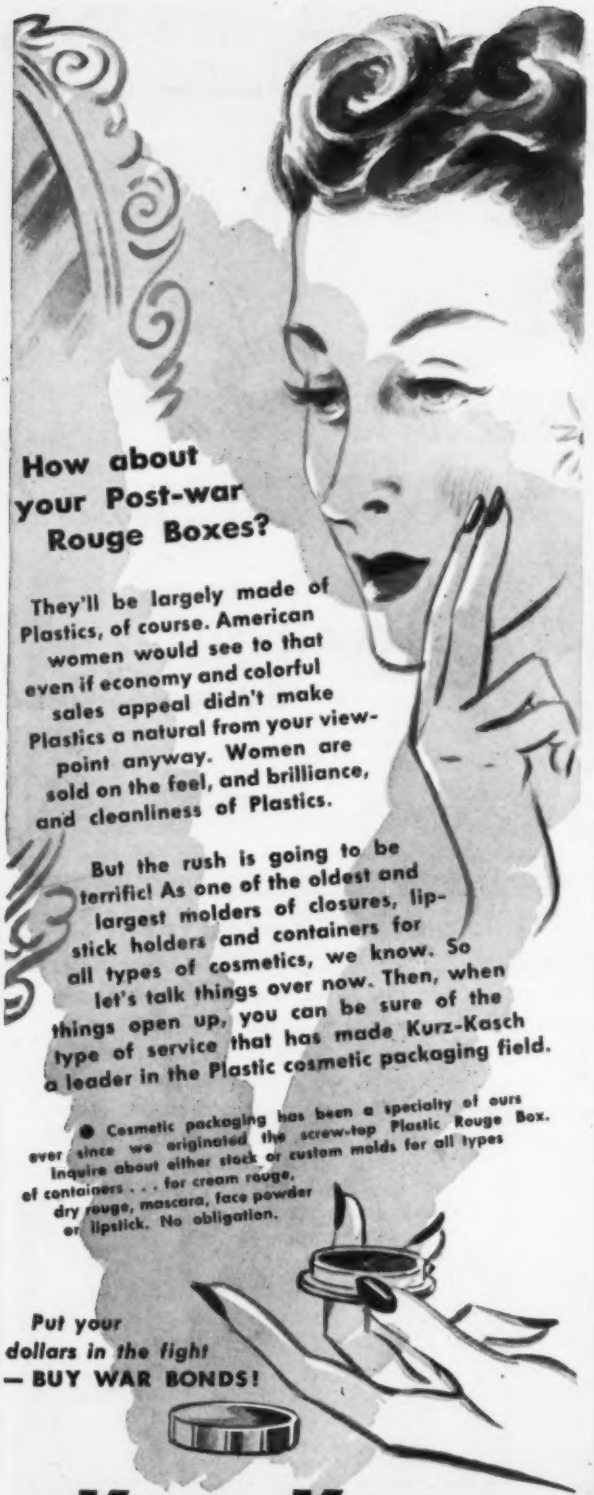
Our long experience dealing with diversified products enables us to turn out the best in present-day packaging. Post-war packaging plans can take shape, however, only as soon as facilities are available. Before then, though, we should be pleased to consult with you on your particular packaging needs.

TRANS-PAC SERVICES, INC.
PACKAGES PRODUCTS
for the following organizations:

EASTMAN KODAK CO.
CAMPBELL'S SOUP CO.
J. C. ENO, INC.
BLOCK DRUG CO., INC.
CHEF BOY-AR-DEE INC.
FOSTER MILBURN CO.
THE NORWICH PHARMACAL CO.
LEADER NOVELTY CANDY CO., INC.
GENERAL MILLS, INC.
C. J. VAN HOUTEN & ZOON, INC.
THE ANACIN CO. "WHITEHALL"
CARTER PRODUCTS, INC.
BREAKSTONE BROS., INC.
MARLON CONFECTIONS CO.
JOHNSON & JOHNSON INTERNATIONAL
WALLACE & TIERNAN CO., INC.
THE KNOX CO.

TRANS-PAC SERVICES, INC.

662 WEST 52ND STREET. NEW YORK 19, N. Y.



How about your Post-war Rouge Boxes?

They'll be largely made of Plastics, of course. American women would see to that even if economy and colorful sales appeal didn't make Plastics a natural from your viewpoint anyway. Women are sold on the feel, and brilliance, and cleanliness of Plastics.

But the rush is going to be terrific! As one of the oldest and largest molders of closures, lipstick holders and containers for all types of cosmetics, we know. So let's talk things over now. Then, when things open up, you can be sure of the type of service that has made Kurz-Kasch a leader in the Plastic cosmetic packaging field.

● Cosmetic packaging has been a specialty of ours ever since we originated the screw-top Plastic Rouge Box. Inquire about either stock or custom molds for all types of containers . . . for cream rouge, dry rouge, mascara, face powder or lipstick. No obligation.

Put your dollars in the fight — BUY WAR BONDS!

KURZ-KASCH

For over 25 years Planners and Molders in Plastics

Kurz-Kasch, Inc., 1421 South Broadway, Dayton 8, Ohio
Branch Sales Offices: New York • Chicago • Detroit • Indianapolis
Los Angeles • Dallas • St. Louis • Toronto, Canada
***Export Offices:* 89 Broad Street, New York City**

DO YOUR POST-WAR
***Window Shopping* NOW**

Your Product will have a Brighter Future in LUSTEROID VIALS and TUBES

In planning your post-war packaging, it will pay you to look into the advantages of LUSTEROID.

These smart, crystal-clear containers are feather-light, yet strong, rigid and unbreakable. They provide product display along with protection for perfect merchandising.

LUSTEROID vials and tubes come in all colors of the rainbow —clear or opaque. They are printable, thus eliminating labels and cost of affixing them. No protective packing is required and the savings in shipping, etc. can well cover the cost of your packaging program.

Sizes range from ¼" to 1¼" in diameter and lengths up to 6". Cork, slip-on or screw-cap closures.

Write for post-war details

LUSTEROID CONTAINER CO., INC.

Formerly Lusteroid Division of Sillcocks-Miller Company

Office and Factory
10 W PARKER AVENUE MAPLEWOOD N J
MAILING ADDRESS SOUTH ORANGE N J

MANUFACTURERS HAVE CONFIDENCE IN PENICK...

PENICK PRODUCTS

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OLEORESINS
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WATER SOLUBLE GUMS
FINE CHEMICALS
ESTROGENS
INSECTICIDES BOTANICAL
ESSENTIAL OILS
AROMATIC CHEMICALS
PERFUME BASES
VITAMIN OILS
SPICES

. . . because they have long recognized in S. B. Penick & Company the symbol of botanical drugs and fine chemicals of unquestioned identity, purity, quality and strength.

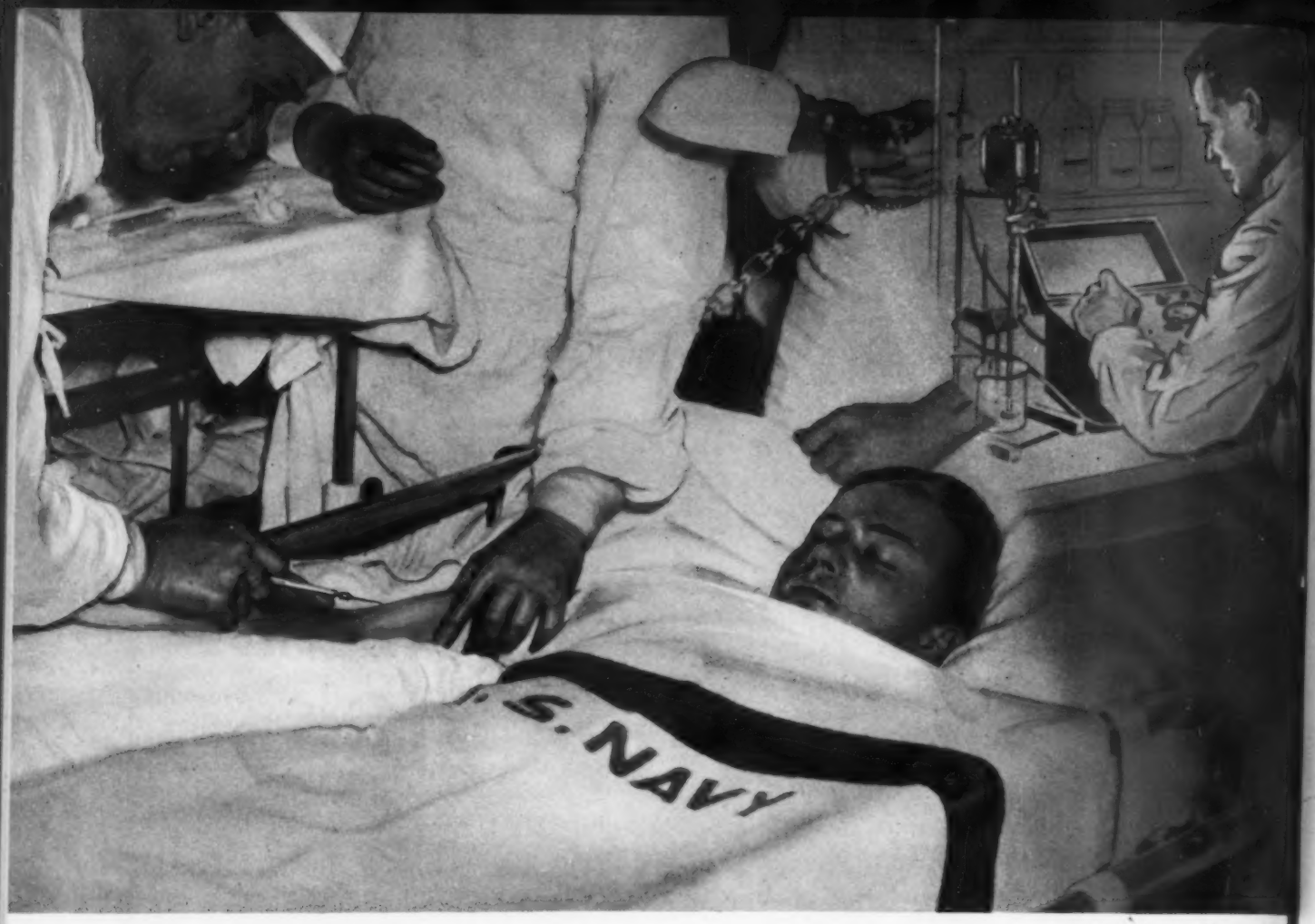
Constant vigilance in maintaining standards of highest excellence is one reason why Penick has become the world's largest botanical drug house, supplying manufacturers with the many products listed at the left --- most of which are of botanical origin.

S. B. PENICK & COMPANY

50 Church Street, New York 7, N. Y. — Telephone: COrtlandt 7-1970

735 W. Division Street, Chicago 10, Ill. — Telephone: MOHawk 5651

BUY WAR BONDS AND STAMPS . FOR VICTORY



Official U. S. Navy Photograph

Measured purity..to help them fight again

In this war, losses from wounds among our armed forces have been remarkably low.

One of the reasons for this is Gas Gangrene, Anti-toxin—a wartime medicinal product which has helped our men live and fight again.

This anti-toxin, product of a number of well-known pharmaceutical houses of America, owes much of its efficiency to the measured purity of several fine chemicals used in its manufacture.

In addition to Gas Gangrene, Anti-toxin, a great number of other medicinal products began with a fine chemical or several fine chemicals of exacting purity. And the efficacy of the product to a large degree depended on the purity of the fine chemical.

Supplying measured chemical purity to exacting specifications has been a wartime contribution of the J. T. Baker Chemical Co.

For more than 40 years Baker has built its chemical business on measured purity. That is why leading pharmaceutical and drug companies choose Baker as a source of supply. They know that Baker's purity by the ton in fine chemicals is the result of unique control methods and ceaseless testing.

Today this measured purity helps our wounded boys in service live!

J. T. Baker Chemical Co., ***Executive Offices and Plant:*** **Phillipsburg, N. J.**
Branch Offices: **New York, Philadelphia and Chicago.**

FOR VICTORY BUY UNITED STATES WAR SAVINGS BONDS AND STAMPS

Baker's fine chemicals

NEWS...

Knauer Advanced by Standard Labs.

Harley L. Knauer has been made merchandising manager of Standard Laboratories, Inc., it has been announced by Erwin Fauser, president. Mr. Knauer was formerly a special representative for William R. Warner & Co., Inc.

HARLEY L. KNAUER

Before joining the Warner organization in 1937 Mr. Knauer was district manager of Nestle Le-Mur Co., and before that was with Johnson & Johnson and Parke-Davis and Co.

Dr. Fosbinder Heads Maltbie

Dr. R. J. Fosbinder has been elected president of the Maltbie Chemical Co., Newark, N. J., succeeding Clarence W. Warner who died in February. Other officers of the company are: J. H. Foy, chairman of the board; W. J. Burke, vice-president in charge of sales; P. J. Blakeslee, vice-president in charge of advertising; V. O. Mattson, vice-president in charge of manufacturing and H. W. Crogan, secretary and treasurer.

Shoemaker & Busch Sold

Shoemaker & Busch, Inc., Philadelphia drug wholesaler, has been acquired by the law firm of Wexler & Weisman which purchased the interest owned by the Busch Estate. The law firm acquired the business for its own account and plans no changes in personnel or policy. Harold C. Halberstadt, president of the company will continue as general manager. Other officers elected March 16 are: Morris M. Wexler, vice-president and Morris Weisman, secretary-treasurer.

Winthrop Appoints Dr. Towse

Appointment of Dr. Robert C. Towse as medical director at the Rensselaer plant of Winthrop Chemical Co., Inc., has been announced by Dr. Theodore G. Klumpp, president. Dr. Towse was an Army instructor at Camp Pickett, Va., until March 1943 when he was given a medical discharge. A specialist in surgery, he previously had been associated with St. Agnes Hospital, White Plains, N. Y., Northern Westchester Hospital, Mt. Kisco, N. Y., and Grasslands, the Westchester County, N. Y. hospital. He was graduated from Dartmouth College and the College of Physicians and Surgeons, Columbia University, N. Y.

Nordlinger Advanced to Colonel

Stephen L. Nordlinger has been promoted from lieutenant colonel to colonel. Colonel Nordlinger is now stationed in China. When he entered the armed forces he was vice-president of Conti Products Corp. and a lieutenant in the reserve.

Whitehall Sales Officials

Appointment of two Whitehall Pharmacal Co. sales executives has been announced by Walter Silbersack, executive vice-president and general manager of American Home Products Corp., of which Whitehall is a subsidiary.

IRA D. JOEL

Ira D. Joel becomes director of chain store sales and E. L. Bernegger is sales manager of the company in charge of retail and wholesale sales.

Mr. Joel joined Kolynos in 1917 as a chemist and bacteriologist. Two years later he entered sales work and transferred to American Home Products when Kolynos was acquired by that company. Before assuming his present duties, he was sales manager of Anacin and Larned.

Mr. Bernegger came to American Home Products in 1941 from the International Tissue Corp. Prior to his new appointment, he was assistant sales manager of Anacin and Larned.

E. L. BERNEGGER

Stearns Appoints Dr. Wells

Dr. Eugene H. Wells, formerly of the U. S. Food and Drug Administration, Washington, has been appointed director in charge of chemical and biological control of the Frederick Stearns & Co. division of Sterling Drug Inc.

Since 1939, Dr. Wells has been a member of the chemical section of the drug division of the FDA. Prior to that he was for three years an FDA field representative, working out of New Orleans and later Chicago.

He is a graduate of Northwest Missouri State Teachers College and received his M. S. and Ph.D. degrees in organic chemistry at the University of Iowa.

Emery Industries Appoints Faiella

Emery Industries, Inc., Cincinnati, has appointed J. D. Faiella to direct the new plastolein products department which has been established to handle the development and commercial application of a series of new fatty acid derivatives. Following his graduation from the University of Richmond in 1937 Mr. Faiella began working with plastics at the Mellon Institute of Industrial Research, Pittsburgh. Since that time he has served in a technical capacity in the plastics industry.

The artist in perfumes envisions a new world of fragrances still unknown today . . . fragrances which his creative skill will translate into reality in days to come. And Dow is helping him to make these plans come true . . . by placing at his disposal an ever-widening selection of fine chemicals and Synthetic Aromatics.

The quality and uniformity of Dow Synthetic Aromatics available today reflect a long record of experience in precise chemical manufacture. True to its tradition of progress, Dow is applying its research facilities to the perfection of still newer aromatics to enrich the possibilities of tomorrow's creative perfumery.

DOW AROMATIC PRODUCTS: Coumarin, Cyclotene, Diphenyl Oxide, Diphenyl Methane, Gardanthrol, Indol, Methyl Anthranilate, Methyl Phenyl Carbinyl Acetate, Methyl Salicylate, Palatone, Phenyl Ethyl Acetate, Phenyl Ethyl Alcohol, Styrene P-100, Sylvenol, and others—

THE DOW CHEMICAL COMPANY, MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis
Houston • San Francisco • Los Angeles • Seattle

Synthetic Aromatic *Chemicals*

DOW

CHEMICALS INDISPENSABLE TO INDUSTRY AND VICTORY

Neuberg Appoints Chase

Irving Edgar Chase has been appointed sales director of William D. Neuberg Co., New York.

American Home to Spend $15,000,000

A maximum of $15,000,000 will be spent in the closing war years and immediate post-war period in the plant and laboratory expansion program of American Home Products Corp., it has been announced by Alvin G. Brush, chairman of the board.

Mr. Brush made his statement in connection with the issuance of the corporation's 1944 Yearbook for stockholders and employees and revealed that since Pearl Harbor, American Home Products has spent a total of $7,655,972 on buildings, machinery, equipment, and improvements on plant structure.

In addition to 33 Laboratories in this hemisphere, the company has 38 plants, 38 sales headquarters, and 55 warehouses located in 41 cities in 17 of the United States, and in 5 cities in 3 provinces of Canada. The Yearbook also revealed that the company has 9 plants, 7 laboratories, 9 warehouses, and 9 sales headquarters in 8 foreign countries.

Ten Abbott Fellowships

Abbott Laboratories has appropriated $50,000 to provide for research fellowships covering a period of five years in ten universities, S. DeWitt Clough, president, told stockholders at their annual meeting March 29.

The universities are: California Institute of Technology; Cornell; Harvard; University of Illinois, Medical School; Massachusetts Institute of Technology; University of Minnesota; Ohio State; Purdue; Tulane and the University of Wisconsin.

Mr. Clough also announced that the scientific staff of Abbott Laboratories has been increased by nineteen new members.

All seventeen directors of the company were re-elected by the stockholders. Following the stockholders meeting, the directors re-elected all officers.

Hopkins Heads Hair Coloring Division

W. T. Hopkins has been appointed manager of the hair coloring division of Sales Affiliates. In his new position he will arrange for the distribution of Inecto, Loxol, Extra Shampoo Tint and the accessory hair coloring products of the Sales Affiliates line.

At a testimonial dinner in his honor, S. DeWitt Clough (left) is congratulated by executive vice-president R. M. Cain. Mr. Clough has completed 40 years of service to Abbott Laboratories, the last twelve as president and general manager.

Buck Heads Michigan Assn.

The following new officers have been elected by the Allied Drug and Cosmetic Association of Michigan: president, Gordon E. Buck of Standard Oil Co. of Indiana; vice-president, M. G. de-

GORDON E. BUCK

Navarre; secretary, A. S. Bedell of Beauty Counsellors; treasurer, Stewart Cowell of J. T. Baker Chemical Co.

The executive committee is composed of Donald Melville, Frank W. Kerr Co.; E. E. Van Allsburg and Geoffrey Snider, Commercial Solvents Corp.

Mr. Buck has been with Standard Oil for seventeen years and during the past twelve years has been handling U.S.P. white oils, technical oils, petrolatums, waxes and base oils for the Detroit division.

Long Retires from Sharp & Dohme

E. Hugh Long, vice-president in charge of sales of Sharp & Dohme, Inc., retired April 1, after thirty-five years spent in the pharmaceutical and biological field.

Mr. Long, a native of Dallas, assumed his position as vice-president in 1939. His first affiliation in the pharmaceutical and biological field was with the Mulford Biological Laboratories with whom he served until its merger with Sharp & Dohme in 1930.

J. S. Zinsser, president of the company, also announced the appointment of R. O. Lohrberg as general sales director, and J. G. Bill as sales distribution director in charge of branch operations and products marketing. C. B. Pyle has been made field operations director, responsible for training and direction of sales personnel.

Olin Joins Dermetics

Oscar Olin has resigned as retail sales manager of Revlon Products Corp., New York, and has joined Dermetics, Inc., New York, as sales manager.

The first annual sales meeting of the new Cheplin Laboratories sales staff held in Syracuse. On the extreme right of the picture is Philip C. Sayres, president of Cheplin, and seated in the center is A. B. Dulin sales manager.

Continental Can Appoints Rosenbauer

F. W. Rosenbauer, formerly manager of tobacco and pharmaceutical sales, Owens-Illinois Can Co., which was recently acquired by Continental Can Co.,

F. W. ROSENBAUER

has been appointed manager of tobacco, proprietary and special container sales for Continental Can Co. He will continue to make his headquarters in New York, and to report to W. P. Murray, general manager of general line sales.

Mennen Gives Wholesaler Awards

Silver tfophies have been presented to Schieffelin and Co., New York, and Smith, Kline and French, Philadelphia, by the Mennen Co. The award to Smith, Kline and French was for doing the largest dollar volume in Mennen products of any wholesaler in the country, while the award to Schieffelin and Co. was for the highest percentage of increase in sales volume among Mennen wholesale distributors in 1944.

Both presentations were made by W. G. Mennen, president of the Mennen Co., at luncheons given to the sales forces of the companies in their respective cities.

Ostreich Acquires Controlling Interest

Charles H. Ostreich announces that he has acquired the controlling interest in Lundborg, Inc., MacGregor Men's Toiletries, Inc., the Lander Corp., and Carlova, Inc. Manager of the parent concerns since 1920, Mr. Ostreich now becomes president, with George E. Ostreich, A. A. Alexander, and Ralph M. Parsons, vice-presidents; and Michael J. Ostreich, treasurer.

Tangee Sales Representatives

Tangee announces the appointment of Myles N. Ruttenber as territorial sales representative in Indiana, Kentucky and West Virginia.

P. J. Miller Jr., W. E. Edwards and E. L. Smelser have also been appointed junior sales representatives. Both Mr. Ruttenber and Mr. Miller return to civilian life after more than three years of service with the armed forces.

Storfer in France

Benson Storfer, president of Parfums Corday, and Kathleen Mary Quinlan, left for France last month—one of the first American businessmen with interests in France to make the trip. Mr. Storfer plans to stay abroad for several months for the purpose of reorganizing the Corday factory in Surresnes, so that shipments may be resumed to this country as soon as conditions permit.

Javal Returns to France

Fernand Javal of Parfumerie Houbigant, accompanied by his wife has returned to France to undertake an assignment to help in the vast industrial reorganization of that country. Before coming to the United States, Mr. Javal was head of the House of Houbigant in Paris and also functioned as mayor of Livry Sur Seine. Although living and traveling conditions remain very unsettled, he hopes for a brief reunion with his son and daughter before proceeding with his work. Mr. Javal's only son has distinguished himself in the French Army and his daughter is also serving as an officer in the French armed forces.

U. S. Bottlers Mchy. Bulletins

The U. S. Bottlers Machinery Co., Chicago, is preparing a series of new bulletins on container cleaning, filling and packaging equipment. The first three of these bulletins now ready for distribution are: "The New U. S. Improved Siphon Filler," "The E-Z Air Cleaner," and "Hand Washing and Filling Equipment for Small Bottling Establishments." Copies are available upon request.

High-ranking officials of the Guatemalan Army Air Corps, visiting the United States as guests of the War Department, inspect the Bristol-Myers Co. plant at Hillside, N. J. At the extreme left is W. M. Bristol, Jr., vice-president of the company, and at the extreme right is Colonel William Lane of the U. S. Army Air Corps, official host for the War Department.

ADVERTISEMENT—*This entire page is a paid advertisement.* *Prepared Monthly by U. S. Industrial Chemicals, Inc.*

U.S.I. CHEMICAL NEWS

April ★ A Monthly Series for Chemists and Executives of the Solvents and Chemical Consuming Industries ★ 1945

Current Shortages Rouse New Interest In Natural Resins

Spectacular Pacific Successes Seen Hastening Large-Scale Availability

Synthetic resins, like other commodities required in the war effort, have been subjected to varied restrictions as a result of constantly changing Government specifications and raw-material shortages. The first serious shortage was in glycerine, which affected the availability of many synthetics. Then, when glycerine again became available, the demand for phthalic-alkyd type resins and paints by the armed forces increased to such an extent that WPB had to place these resins under allocation.

Next came allocation of phenolic resins and, later, of the raw materials required for maleic and other specialty resins. Each move reflected the changed requirements of the military and each, of course, affected the availability of the different resins for essential civilian uses. The only conventional synthetic resin that remained free of Government restrictions as to raw materials was Ester Gum; but here the quantities available were consumed in high-rated uses so that, in effect, even it could not be considered for civilian use.

New Resins Made

Protective coatings manufacturers were forced to shift from one type of resin to another, just as the resin manufacturers were forced to shift raw materials. U.S.I., for example, found itself turning "technological handsprings" in its research laboratories and plants to make available, first, the urgently needed war resins, and then to provide new and previously untried types for varied purposes. These purposes ranged all the way from resins for use as shellac substitutes and as replacements for phthalic and alkyd types, to resins that could be used in place of the natural resins usually imported from Far Eastern areas occupied by the enemy.

Rosin Allocated

During the past month, WPB has placed rosin under allocation, setting individual consumption and inventory quotas for specified industries. This has forced the use of resins that contain either very little rosin or none at all. Through the importation of currently available natural resins, U.S.I. has kept stocks available of Congo Gum, Kauri Gum, and Accroides (Yacca or Red Gum), none of which contain rosin. Of these types, the most widely used is Congo Gum, which, until two months ago, was available for use without restriction. However, in March, due to the shortage of rosin and the resulting heavy demand for all types of rosin-free resins, the WPB placed all natural resins under Allocation Order M300—Schedule 96.

Importation of the largest possible quantities of Congo Gum, Kauri Gum and Accroides are being continued. It must be remembered, however, that war-time conditions present difficulties in gathering the gum and shipping it. It is to be expected that the spectacular advances of our armed forces in the Pacific area will open the important gum pro-

(*Continued on next page*)

Sees Hope for Early Return of Many Prewar Denaturants

Freeing of Axis-Held Territories Already Reflected in Increased Supply of Essential Oils Used in Drugs and Cosmetics

Kwang-Si Province, Calabria, Java, Madagascar, Spain, Siberia—such were the widely scattered areas of the world upon which the alcohol industry depended for denaturants used in alcohols for making lotions, shampoos, bay rum, mouth washes and the rest. Starting with the fall of France, many of these areas fell into enemy hands. Spain presented political difficulties. In Siberia and Australia, as in America itself, available manpower had to be concentrated on the production of allied war materials.

Measures taken by alcohol producers, the Treasury Department and Central and South American countries have, to a surprising extent, alleviated many of these shortages. U.S.I., for example, has followed a system of interplant transfers which, while costly, has helped to meet customers' needs equitably.

Harvesting citronella grass in Ceylon. Oil of citronella is the starting point for the synthesis of menthol.

Italian Shipments Start

However, the shipment of 80,000 pounds of oil of bergamot from Italy, last year, was the signal for new hope for the early return of the many essential oils which cannot be produced economically in the Western Hemisphere. The freeing of France and the rapid rolling back of the Japs in the Pacific has given fresh impetus to these hopes. Here, briefly, is the current situation as it affects the more important odoriferous denaturants:

Oil of citronella — Important as the starting point for the synthesis of menthol, this oil came principally from Java. Currently, an inferior grade is available from Ceylon. Guatemala and other Central American Countries have started growing citronella grasses, but it will take a year or two to get real production.

Mint oil — This source of natural menthol is now coming in large quantities from Brazil. While higher in price than the product originally obtained from Japan, natural menthol is now cheaper than the product synthesized from oil of citronella.

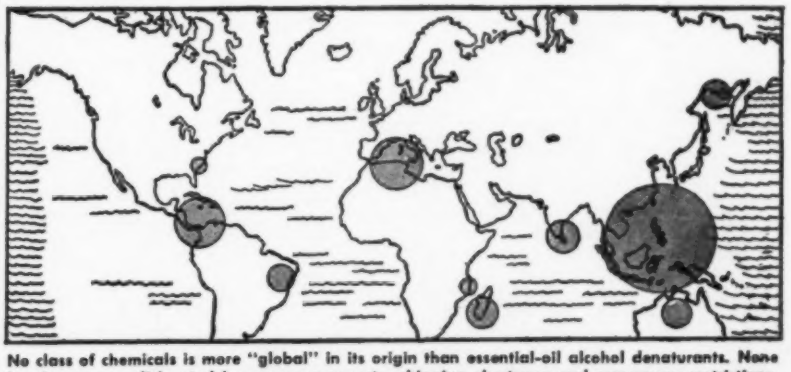
Oil of cassia — This essential oil (USP), which is used as a substitute for oil of cinammon, was produced exclusively in Kwang-Si Province, China. Currently synthetic oil of

(*Continued on next page*)

Claisen Reactions Yield Superior Drying Agents

Drying properties greatly superior to those found in naturally occuring oils, such as linseed, tung and certain fish oils, are claimed for a series of new esters described in a recent patent.

These esters are generally prepared by condensing, via a Claisen reaction, esters derived from the glycerides of natural oils such as tung, menhaden and sardine. These esters are heated in the presence of a condensing agent such as sodium hydride or U.S.I.'s Sodium Ethoxide until the conversion to the sodium derivative of the beta-keto-ester is substantially complete. The reaction mixture is then acidified and washed free of salt, acid and other soluble impurities. The water and diluent are removed by distillation and the desired product recovered as a residue.



No class of chemicals is more "global" in its origin than essential-oil alcohol denaturants. None has been more dislocated by enemy conquests, shipping shortages and manpower restrictions.

ADVERTISEMENT—*This entire page is a paid advertisement.*

April ★ **U.S.I. CHEMICAL NEWS** ★ 1945

Natural Resins

(Continued from preceding page)

ducing centers in the Philippines, Netherlands, East Indies and Singapore — much sooner than we once thought. The availability of these important resins will alleviate continuing shortages of rosins and synthetic resins without placing an additional strain on our domestic manpower.

Removes Fatty Acids by New Technique

Vegetable and animal oils for many uses are said to be freed from color, lipoids and free fatty acids by a technique which uses a vacuum neutralizer, but no heat.

The oil to be treated is first washed with water. After agitation, the mixture of oil and water is allowed to stratify, the lipoids being drawn off as part of the water layer. The oil is made color-free by mixing with clay and filtering.

Rid of lipoids and color, the oil is treated with a mixture of ethanol and sufficient sodium hydroxide to saponify the free fatty acid, the final reaction in this step taking place as the mixture is sprayed, under vacuum, into a neutralizing chamber. The result of this reaction is alcohol soap and colorless oil, free from lipoids and fatty acids. Alcohol is recovered from the residue by distillation, leaving a by-product of relatively high-grade soap stock.

New Dry Mounting Tissue Uses Phthalates and Alcohol

A new type of dry mounting tissue, used to produce fast, flat mounts of photographs and the like, is described as overcoming the common tendency to "block" or stick together in the package. The new tissue, described in a recent patent, is coated with a thermoplastic adhesive which does not become tacky at temperatures below 125 F., and therefore is non-adhesive at normal room temperatures. The adhesive heat seals, however, when pressed with an iron maintained at 200 to 220 F.

The adhesive consists essentially of cellulose acetate butyrate, a compatible plasticizer, such as diethyl or dibutyl phthalate, and an alkyd resin. The adhesive may be applied to the tissue from a melted mixture or in a benzene-denatured alcohol solvent.

Prewar Denaturants

(Continued from preceding page)

cassia, denaturant grade, is substituting for this substitute.

Camphor — Synthetic camphor has been in large-scale production in this country ever since the Japanese monopoly was broken in the early 30's. However, its important uses in photographic film, plastics, etc., made it hard to get now.

Oil of lavender — When the price of this product of Southern France skyrocketed, the Treasury Department authorized the substitution of domestic oil of cedar leaf. It is hoped that lavender will soon again be available from France.

Oil of bay — This essential ingredient of the familiar bay rum is a product of Puerto Rico and the Virgin Islands. It is now being imported without serious difficulty.

Domestic products — Oils of sassafrass, turpentine, pine, wintergreen, peppermint and cedar leaf were, fortunately, in production in this country long before the war. However, the shortage of manpower and the needs of our armed forces have combined to seriously limit the use of these oils as denaturants.

Separating clove buds and stems on far-off Zanzibar. Oil of cloves also comes from the French Island of Madagascar.

Prolonged Penicillin Action

Following research in the Naval Medical Corps, it is indicated that the effective action of a mixture of penicillin and beeswax-peanut oil lasts much longer than penicillin alone. Action is still further prolonged by application of an ice-bag at the point of injection.

TECHNICAL DEVELOPMENTS

Further information on these items may be obtained by writing to U.S.I.

To seal waterproof bags, four adhesives are offered. Different characteristics claimed for each adapt them to four different types of jobs. They are said to meet Army-Navy packaging specifications. **(No. 921)**

USI

A range of filter aids is offered for tasks such as clarifying beer, refinery products and pectins. They range in size from one designed to remove colloidal matter of less than 0.1 micron diameter, up to those of several times that pore size and flow rate. The aids are milled from finest diatomaceous silica. **(No. 922)**

USI

Soap that lathers better, and requires less soap substance, is promised by the processor of a new colloidal clay, offered for use in soap manufacture. **(No. 923)**

USI

A new rolling-oil additive, for the metal working industry, is designed to blend with mineral oil at room temperature, and to be modified by adding kerosene. This refined fatty ester additive can be combined in proportions of 3 to 5 per cent of the mineral oil. **(No. 924)**

USI

Rigid synthetic rubber products of high electrical resistance can be produced by incorporating a new resin substitute for carbon black, according to an announcement. Proper mixtures of the three grades of the new resin are said to impart desired qualities of rigidity, hardness, elongation and tensile strength. **(No. 925)**

USI

A new wetting agent, claimed to contain no oil and only a trace of inorganic salts, is said to be particularly adapted to tasks such as scouring wool, wetting back dried skins, and in fulling soaps to assist rinsing, etc. **(No. 926)**

USI

A new adhesive, which should provide time and labor savings in merchandise handling, is designed to hold paperboard and wooden boxes together in unit loads. It is said to combine high shear strength with low tensile strength, thus preventing slippage during transit, yet making it easy to separate packages at their destination. **(No. 927)**

USI

A fire- and shock-resistant plastic, that is said to generate no toxic gases when heated, and to be easily molded, has been developed. Key to the unusual properties of the new plastic is the use of asbestos instead of organic compounds as a filler. **(No. 928)**

USI

A new glass is being manufactured to withstand operating temperatures up to 650 F and thermal shock to 400 F. It is said to have four times the strength and six times the shock-resistance of plate glass, and is suggested for use in tanks for acids, alkalis and solvents. **(No. 929)**

USI

To recover valuable metals from waste solutions is the stated function of a new process using anion exchange resins. **(No. 930)**

U.S.I INDUSTRIAL CHEMICALS, INC.

60 EAST 42ND ST., NEW YORK 17, N. Y. — BRANCHES IN ALL PRINCIPAL CITIES

ALCOHOLS
Amyl Alcohol
Butanol (Normal Butyl Alcohol)
Fusel Oil—Refined
Ethanol (Ethyl Alcohol)
Specially Denatured—all regular and anhydrous formulas
Completely Denatured—all regular and anhydrous formulas
Pure—190 proof, C.P. 96%, Absolute
*Super Pyro Anti-freeze
*Solox Proprietary Solvent
***ANSOLS**
Ansol M
Ansol PR

ACETIC ESTERS
Amyl Acetate
Butyl Acetate
Ethyl Acetate
OXALIC ESTERS
Dibutyl Oxalate
Diethyl Oxalate
PHTHALIC ESTERS
Diamyl Phthalate
Dibutyl Phthalate
Diethyl Phthalate
OTHER ESTERS
*Diatol
Diethyl Carbonate
Ethyl Chloroformate
Ethyl Formate

INTERMEDIATES
Acetoacetanilide
Acetoacet-ortho-anisidide
Acetoacet-ortho-chloranilide
Acetoacet-ortho-toluidide
Acetoacet-para-chloranilide
Ethyl Acetoacetate
Ethyl Benzoylacetate
Ethyl Sodium Oxalacetate
ETHERS
Ethyl Ether
Ethyl Ether Absolute—A.C.S.
FEED CONCENTRATES
*Curbay B-G
*Curbay Special Liquid
*Vacatone 40

ACETONE
Chemically Pure
RESINS
S&W Ester Gums—all types
S&W Congo Gums—raw, fused & esterified
S&W *Aroplaz—alkyds and allied materials
S&W *Arofene—pure phenolics
S&W *Arochem—modified types
S&W Natural Resins—all standard grades
OTHER PRODUCTS
Collodions
Ethylene Glycol
Nitrocellulose Solutions
Ethylene
*Indalone
Urethan

*Registered Trade Mark

Flora Kessler Leaves Northwestern

The Northwestern Chemical Co., Wauwatosa, Wis., has announced that Flora Kessler has resigned after thirty years of service as bookkeeper and treasurer of the company. A farewell dinner party was given in her honor at which she was presented with a diamond pin.

Remus Appoints Royer on Coast

O. D. Royer Co., 1340 East Sixth St., Los Angeles, has been appointed to represent Edward Remus & Co., Inc., New York, in the Pacific Coast area. The company has also announced that its midwest office in charge of Richard Remus, assisted by George M. Cox, has been moved to 806 Delaware St., Kansas City 6.

Heyden Preferred Stock Offered

Ten thousand shares of Heyden Chemical Corp. 4 per cent cumulative $100 par value preferred stock, series B., was offered to the public at $103 a share and accrued dividends by an underwriting syndicate headed by A. G. Becker & Co., Inc.

The proceeds from the sale will be added to working capital to finance increased inventories and accounts receivable. Although the company has no such plans at present, part of the proceeds may be used at a later date to acquire the securities or assets of companies engaged in allied businesses.

M.M.&R. Celebrates 50th Year

With the completion of another building to house its expanded manufacturing facilities, Magnus, Mabee & Reynard, celebrates its first half century of service to American industry. The new five-story building adjoins the firm's present quarters and adds over 10,000 square feet of space.

It was in 1895 that Percy Cecil Magnus purchased an interest in McKenzie Brothers & Hill, a small essential oil house dealing in a general line of quality materials from imported and domestic sources. In December, 1897, the two McKenzie brothers withdrew and shortly thereafter the firm was reincorporated under the name of Magnus & Lauer.

With Percy Cecil Magnus as president and Monroe W. Lauer as vice-president and treasurer the firm's staff and activities were augmented. In 1901 at the death of Monroe Lauer his position was taken over by his brother, Edgar J. Lauer, and the name of Magnus and Lauer was continued.

In 1906 the company merged with the National Essential Oils Distilling Company of Chester, Conn., and the name became Magnus, Mabee & Reynard, Inc. Percy Cecil Magnus assumed the office of president, D. W. Mabee, vice-president, G. C. Reynard, secretary. Mr. Magnus purchased Mr. Mabee's interest in 1907 and Mr. Reynard's interest two years later.

Percy Cecil Magnus, Jr., who had joined the company in 1912 at the age of 18, succeeded his father as president upon his death in 1916. Joseph Baird Magnus, the founder's second son, entered the firm in 1916 when he was 20, became treasurer and later vice-president. Robert Burke Magnus, the founder's youngest son, later joined the company assuming the position of treasurer and then vice-president.

WILLIAM F. FISCHER

Since World War I Magnus, Mabee & Reynard has grown steadily. It now has agents in twenty foreign countries and in this country serves 67 industries. The present officers of the company are: P. C. Magnus, president; J. B. Magnus, R. B. Magnus and T. B. Tribble, in charge of the mid-western branch of the company, vice-presidents; G. H. McGlynn, treasurer, C. K. O'Donoghue, comptroller; A. H. Downey, assistant treasurer and technical director; and W. F. Fischer, assistant treasurer and general sales manager.

Mr. Fischer enjoys the honor of having the longest record of employment with MM&R of anyone presently active. He started as an office boy in 1907.

Percy C. Magnus, president of MM&R, J. B. Magnus and Robert B. Magnus, vice-presidents, with a portrait of their father, Percy Cecil Magnus, founder of the company.

Stell Ayleshire Joins Jeurelle

Barbara Hurst, president of Jeurelle, Inc., New York, distributor of Jeurelle and Seventeen products, has announced the appointment of Stell Ayleshire as advertising and promotion manager. Miss Ayleshire has been associated with the toilet goods industry for twelve years. She was formerly publicity director for Wesley Associates for six years, where she also worked on cosmetic copy and promotion, and served as a member of the agency's merchandising plan board. Prior to joining Wesley, she was with John Hudson Moore, Inc., for six years, in charge of advertising, promotion, publicity and packaging.

Elizabeth Maher will continue to handle the publicity for Jeurelle.

If you moved your laboratory into a customer's home

WOULD your product meet your quality standards if you ran a laboratory test in a customer's home? Is your package delivering to your customer the same fine product you pack in your plant?

Packaging takes over your quality control from the minute your product leaves your production line. Only the finest package can thoroughly protect the quality of your product until it reaches your customer's hands.

Many leading manufacturers rely upon Anchorglass containers and a carefully selected Anchor Cap to positively safeguard their fine quality every step of the way into the customer's home and until entirely consumed.

Such a package usually costs less in the long run because it eliminates complaints, returns, adjustments and loss of good will. May we show you what we mean?

"Meet Corliss Archer" every Thursday evening, entire Coast-to-Coast Network CBS

Anchor
CONTAINERS and CAPS

PRODUCTS OF
ANCHOR HOCKING GLASS CORPORATION
LANCASTER, OHIO

Dr. Kitchen—Cheplin Medical Dir.

Henry P. Bristol, president, Bristol-Myers Co., New York, has announced the appointment of Delmas K. Kitchen, M. D., to the post of medical director of Cheplin Laboratories, Inc., Syracuse.

DELMAS K. KITCHEN

Dr. Kitchen is a native of Arkansas. Upon receiving his medical degree in 1932, he went to Panama. He secured his hospital training at Gorgas Hospital at Ancon, C. Z., at Colon Hospital, Colon, and at New York Polyclinic. After three years of medical practice, he joined one of the large manufacturers of pharmaceutical and biological products, where he engaged in special work in endocrinology, becoming assistant scientific director of the research department in 1942.

Palmer Heads Academy Library Com.

A campaign has been launched to raise contributions of $500,000 for expansion of the library of the New York Academy of Medicine. Carleton H. Palmer, chairman of the board of E. R. Squibb & Sons, is chairman of the committee which includes W. B. Bell, president of American Cyanamid Co.; John L. Johnston, president of Lambert Co., John L. Smith, vice-president of Charles Pfizer & Co.; Dr. Marvin Thompson, president of William R. Warner & Co.; George Van Gorder, executive vice-president of McKesson & Robbins, Inc.; Lee H. Bristol, vice-president of Bristol-Myers Co., and Dr. Theodore G. Klumpp, president of Winthrop Chemical Co.

The $500,000 fund would permit construction of a nine-floor addition to the stack room, which will make it possible for the library to accommodate 374,000 volumes. It would also provide for a new catalogue of 2,800,000 cards, and improved handling, delivery, photostating, and bibliographical service.

Dr. Heinrich Heads Kolmar Research

Kolmar Laboratories and its affiliate Kolmar Chemical, with plants in Milwaukee, Port Jervis, etc., has announced that Herbert Heinrich, Ph.D., has taken over complete direction of Kolmar Laboratories research division and is the acting vice-president of Kolmar Chemical Co.

Sterling Drugs Rents Office Bldg.

Sterling Drug Inc. has leased the 43-story Continental Building, 1450 Broadway, New York, for a term of ten years, subject to existing leases. The building will house offices of the company, presently located at 170 Varick St., as well as seven divisions and subsidiaries which are located in other parts of the city.

Some divisions of Sterling will move into the new building immediately but due to existing leases, the major portion of the building will not be occupied by Sterling for several years.

Building leased by Sterling Drug Inc.

Porter Heads Sperti Cosmetics

The appointment of Charles T. Porter as manager of the cosmetic division of Sperti, Inc., has been announced by Ralph A. Lostro, executive vice-president of the company whose main offices

CHARLES T. PORTER

and manufacturing plants are located in Cincinnati.

Mr. Porter has held a responsible executive position with Sperti for the past three years.

Williams Made Director of Sales

Frederick Williams has joined Lucien Lelong, Inc., Chicago, as director of sales. He was formerly advertising manager for Carson, Pirie, Scott & Co.

Michigan Chemical Moves in New York

The eastern sales office of Michigan Chemical Corp., St. Louis, Mich., has been moved to 70 East 45 St., New York 17. The telephone is MUrray Hill 4-6886, The office is under the management of P. J. Lo Bue.

Helfrich Labs. Moves in Chicago

Helfrich Laboratories, Inc., Chicago, will move May 1 into the modern factory building located at 737-9 West Jackson Boulevard, where the company will occupy five floors and the basement, some 60,000 square feet of space. The West Jackson Boulevard building, owned by the West Jackson Building Corp. is under the management of Grant H. Heidbreder who is also vice-president of Helfrich Laboratories, Inc.

Peggy Sage Buys N.Y.C. Building

Peggy Sage has purchased the five-story building at 54 East 57 St., New York. After extensive alterations it will house the Peggy Sage Salon.

Schroder Made Executive Director

Arthur Schroder has been appointed executive director of the American Institute of Chemists. He will assume his new duties May 1, having first been released from the Chicago office of the

ARTHUR SCHRODER

Patent Use and Development Section of the Office of Alien Property Custodian where he has been evaluating the foreign patents seized by the Custodian, with a view toward making them more readily available to American industry.

In addition, for the past three years he has been giving a course in industrial methods of chemical analysis at Illinois Institute of Technology under the Engineering Science War Training Program.

A Son to the Hilfers

Mr. and Mrs. Harry Hilfer have announced the birth of a seven-pound son, Ralph Forester Hilfer. Mr. Hilfer is chief chemist of Associated Distributors, Inc., Chicago.

Barrie and Zerbo Join Martin Labs

George Barrie and John Zerbo have joined the staff of Martin Laboratories, it has been announced by Harry Martin, president and originator of the Tylon cold wave. Mr. Barrie has been named vice-president and general manager and Mr. Zerbo technical director.

Synthetic Gum Benzoin

Allan A. Lubitz, vice-president of Bendix Chemical Corp., New York, has announced that after extensive research the company has succeeded in producing synthetic gum benzoin on a commercial scale. The new product is said to be quite similar to the natural styrax benzoin of the Siam type; to have a sweet-balsamic odor, a sweet taste, an amber color; not to contain any impurities; to be completely soluble in alcohol or in equal parts of methyl carbitol.

Robinson Heads Atlanta Club

The Atlanta Drug and Chemical Club elected new officers at the club's third annual meeting, March 10. L. W. Robinson, division manager of Merck & Co. is the new president and other officers are: E. E. Bengston, division manager of F. W. Fitch Co., vice-president; R. A. Shepard, Sterling Drug, Inc., treasurer.

A. W. Volk of the Atlanta Economy Drug Co., retiring president, will act as chairman of the board of directors and other board members are: W. R. Grandberry and J. C. Bagwell of the SSS Co.; E. D. Crane, Jr., of William R. Warner & Co.; George R. Fellows of Fritzsche Brothers, Inc., and M. R. Lowery of the Pro-phy-lac-tic Brush Co.

Charles S. Wehrly

Charles S. Wehrly, active in the sales of quicksilver, died at his home in St. Albans, N. Y., March 17. He was a graduate of Rutgers University and had been associated with Merchants Chemical Co., New York, for twelve years.

Henry S. Livingston

Henry S. Livingston, 1st vice-president and secretary of Schieffelin & Co., New York, died March 11, after a brief illness. He was seventy-eight years old.

At the age of fifteen he entered the employ of Schieffelin & Co. as an office boy and worked his way through various departments until in 1906 he was elected secretary and a director of the company. In 1922, upon the formation of the executive committee of Schieffelin & Co., Mr. Livingston was elected a member and at the time of his death was chairman of that committee.

It was under his direction that the then new synthetic chemicals such as phenacetine, sulfonal, veronal, heroin, aspirin, etc. were introduced and successfully marketed in the United States.

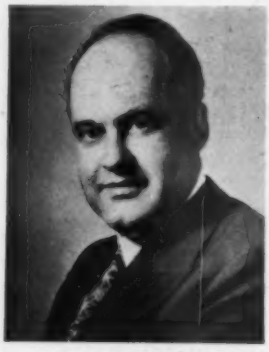
In 1909 he organized the American Kitchen Products Co. to manufacture and market Steero Bouillon Cubes in this country, and became secretary and treasurer of that concern. In 1906 he became interested in the Lederle Antitoxin Laboratories and in 1909 was elected a director and later became vice-president of that company.

Nicholas N. Marcatoon

Nicholas N. Marcatoon chemist of Lorr Laboratories, Paterson, N. J., died March 9 at the age of sixty-one.

George F. Pond

George F. Pond, vice-president and western sales manager of Pneumatic Scale Corp., Ltd., died March 13 in the Passavant Memorial Hospital, Chicago, after a brief illness. He was fifty-eight.



GEORGE F. POND

Mr. Pond was born in Rochester, N. Y., and was graduated from Cornell University with the degree of Bachelor of Mechanical Engineering. His first position was with the Wheeler Condenser and Engineering Co., of whose Philadelphia office, he later became sales manager.

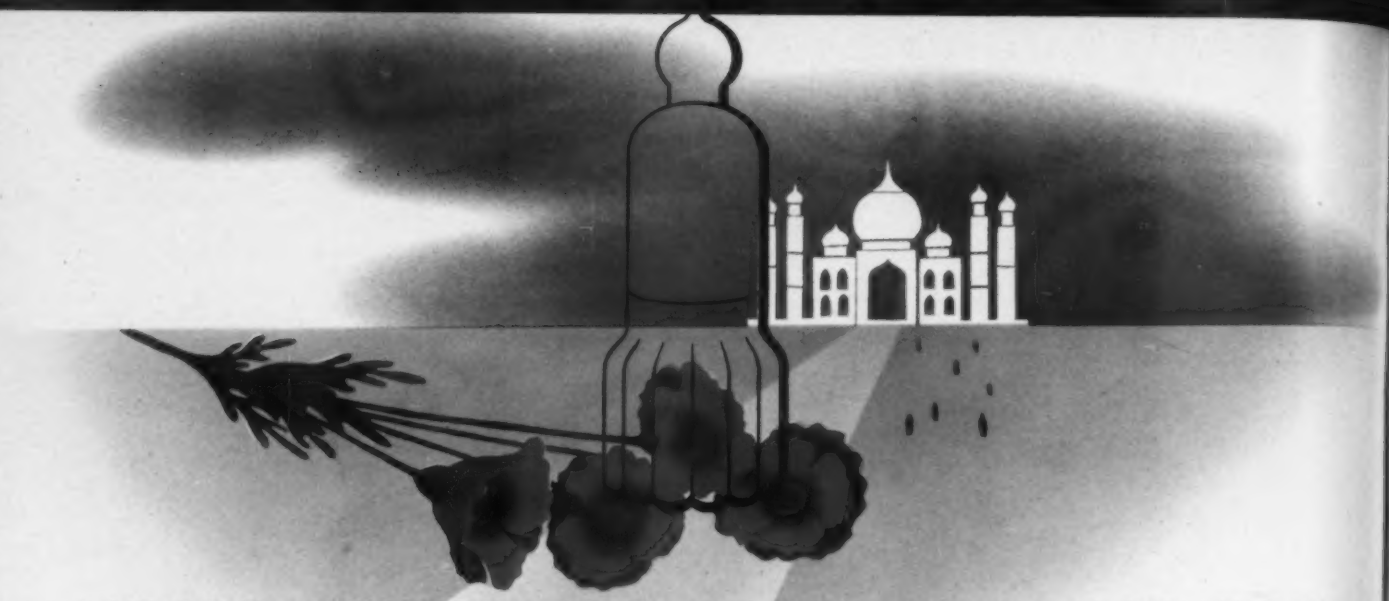
In 1915 he joined Pneumatic Scale Corp., Ltd., going directly to Chicago as a sales representative. Except for a short period during the First World War, he represented the company in the mid-western and southern states until the time of his death. In 1936 the company sent him to Russia, Germany, France and England where he studied packaging techniques. He was made vice-president of the company in 1937.

Samuel P. Nickells

Samuel P. Nickells, retired member of the insecticide department of S. B. Penick & Co., New York, died at his home in Ridgewood, N. J., March 17. He was seventy-nine years old.

He worked first for six years for Eli Lilly & Co. and then represented Parke, Davis & Co. in Kansas City for four years. In 1895 he was sent to New Orleans to establish a Parke, Davis branch. In 1903 he resigned from Parke, Davis to establish a New Orleans branch for William R. Warner & Co. and in 1906 was transferred to the Warner home office in Philadelphia as sales manager. He joined S. B. Penick & Co. as vice-president in 1915, resigning in 1920 to found his own business. W. R. Rowland later became a partner in this firm and Nickells-Rowland Co. was sold to Murray-Nickells, Chicago, in 1926, and Mr. Nickells rejoined Penick.

FOR THE ALLURING ODOR APPEAL OF
Orientals
. . . consult Albert Verley and Company— a complete, self-contained source of materials and creative inspiration



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a complete service from one convenient source

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Materials

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• **YULITOL**—A base of the distinctive Ambre-and-Vetyver Acetate type, of extraordinary roundness and smoothness.

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A selection from many other applicable Albert Verley & Co. specialties, fully described in our handbook "Aromatics" (starting on page 27):

AMBREINE "V"	CHYPRE "V"
AMBRE EXTRA FINE	DAMASCENOL I
BOISETTE N-100	EROLIA
CEDROMAL	OPAFLORA

OPOPANAX N-100

For many years, it has been our goal to offer the perfumer anything that he might need — including materials in any desired stage of fabrication up to the finished composition, and counsel to aid in the constant search for new creative ideas.

Long research and experimentation in each of the major odor groups has led to the development of many original conceptions, combining materials both old and new. A few of these conceptions, in just one odor group, are mentioned here by way of example. They represent only one phase of our many-sided service.

This complete service is now available, to help you prepare for success in your post-war marketing program. Consult us in confidence regarding your post-war odor requirements, and let us contribute to your over-all plan for fabricating odors that will maintain your prestige in world-wide competition, at practicable costs.

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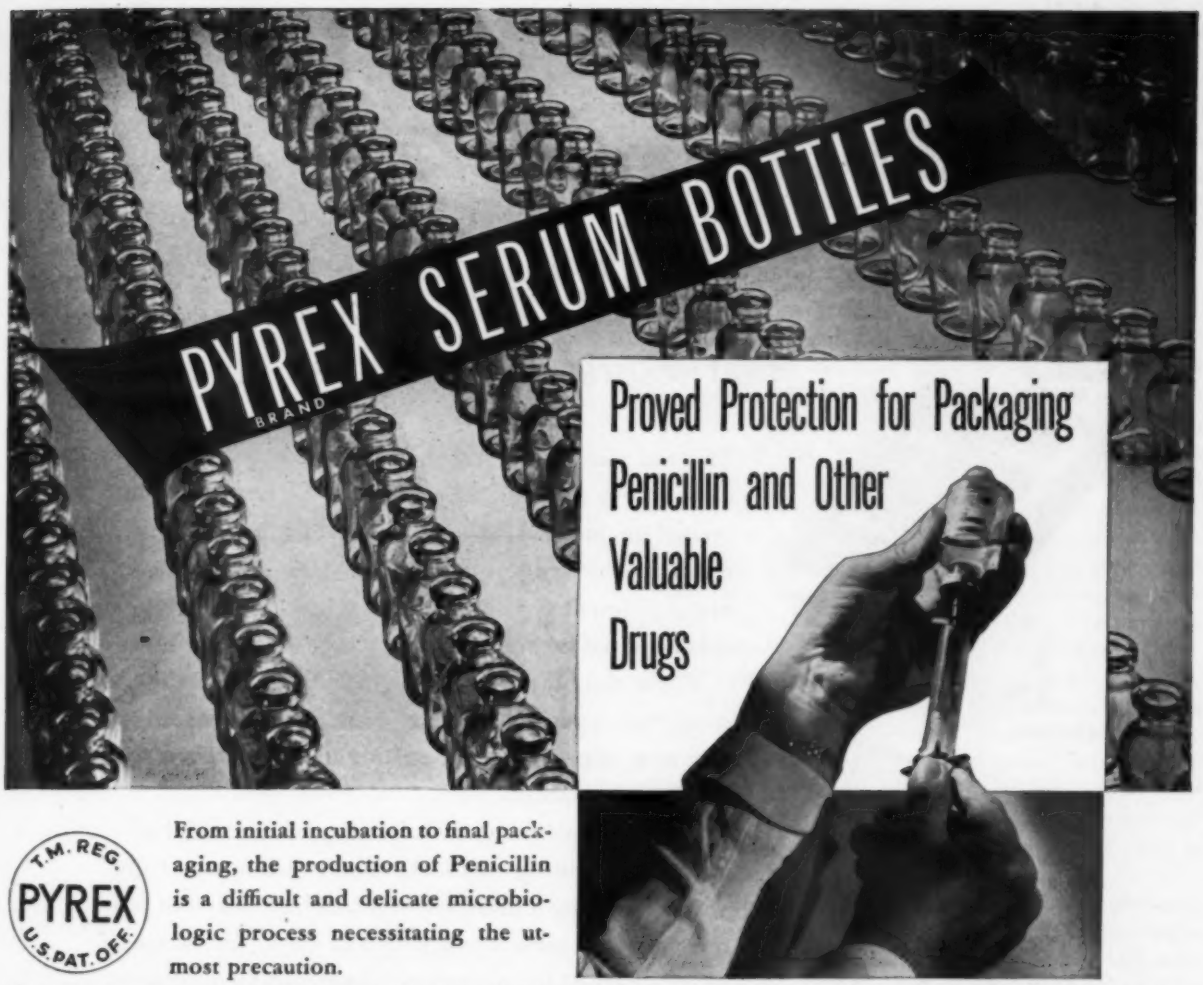

T.M. REG. PYREX U.S. PAT. OFF.

From initial incubation to final packaging, the production of Penicillin is a difficult and delicate microbiologic process necessitating the utmost precaution.

That is why Pyrex brand Serum Bottles have been selected in many instances to package this remarkable new substance. These bottles are fabricated from Pyrex brand Chemical Glass No. 774—the same low alkali, chemically stable glass from which Pyrex petri dishes, culture tubes, Blake and Roux bottles, pipettes and large media bottles used in Penicillin manufacture are made.

The bottles are held to rigid dimensional specifications. Bottoms are practically flat, thus affording greater contact with the drying trays. Glass thickness is uniform, providing for even distribution of the Penicillin over the bottom during the drying process. Rated superior to any other glass on the score of released alkali by USP powder test, Pyrex brand Chemical Glass No. 774 contains no elements of the magnesia-lime-zinc group—no heavy metals whose dissolved salts affect the potency of Penicillin.

Known and respected by the medical profession, the trade-mark "Pyrex" molded in the bottom of each bottle is proof sufficient that you have utilized the best available package for your product, be it Penicillin or any other valuable drug. Investigate Pyrex Brand Chemical Glass No. 774 for all your packaging requirements. Corning Glass Works is now in a position to invite correspondence regarding Pyrex Serum Bottles and similar machine-made items. Write Laboratory and Pharmaceutical Sales Dept., DC4, Corning Glass Works, Corning, N. Y.

"PYREX" is a registered trade-mark and indicates manufacture by

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PYREX FOR PRODUCT PROTECTION FROM PROCESS TO PACKAGE **PHARMACEUTICAL GLASSWARE**

CORNING *means* Research in Glass

Up-to-the-minute Packaging Experience

that insures more efficient production

The war has left no gap in the progress and development of our packaging machinery. We have not only carried on our development work while building armament machines and gyrocompasses, but have supplied many different types of wrapping machines for products required by our Armed Forces.

These machines have been adapted to the use of numerous types of wrapping material. They also feature new improvements resulting in higher speed and greater adjustability.

If you are planning for a better package, more efficient cost-reducing methods, or are seeking the right way to package a new post-war product, why not put our up-to-the-minute experience to work? Our knowledge is backed by more than 30 years of leadership in the packaging machinery field.

Phone or write our nearest office for assistance on any phase of your packaging problems.

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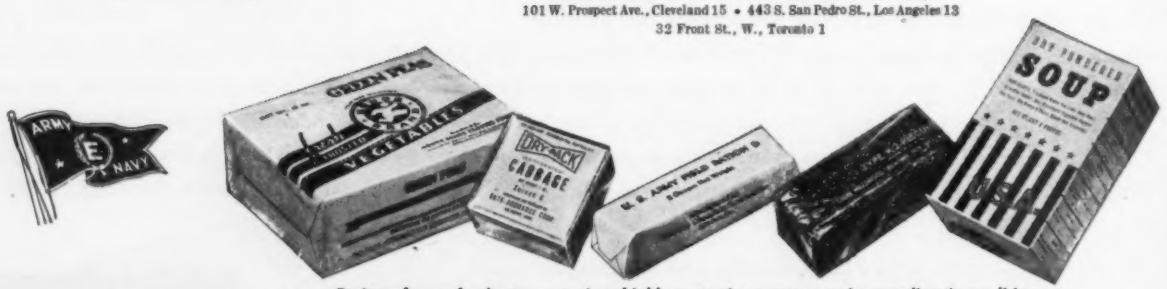

Rations, frozen foods, etc., are given highly protective wraps to resist any climatic condition.

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Over a Quarter Billion Packages per day are wrapped on our Machines

Production Forum

By Francis Chilson
Industrial Consultant

Dear Boss:

"Once in a while a down-trodden production man feels outraged enough to squawk. This is it. I am squawking about the way you allow the Sales Department to bamboozle you about the profit possibilities of the competitive items or 'bumper' items and staples which, from time to time, Sales insists on adding to the line.

"I know it sounds very logical for sales managers to say that just because our men must cover given territories with our specialties, it is just as easy for them to carry a few competitive items and thus utilize spare time and kill two birds with one stone. I know that the Sales Department can create a pretty logical picture and show you in figures that these bumper items "help to absorb overhead." They can show you that you not only recover the cost of materials, factory overhead and labor, plus a substantial profit besides, but they also can show you that all this can be accomplished without extra effort on the part of the men and without extra administrative selling or expense.

"But don't you believe it, Boss. It's the bunk! The addition of competitive and staple items to our line doesn't work out that way in the end. Actually, the addition of staples and 'bumper' items increases overhead tremendously. To make such items, we have to increase our inventories; increase our clerical expense throughout the general offices and the factory as well; we also increase our control laboratory expense and we increase the amount of space and equipment needed in the factory.

"The amount of space required for warehousing and production operations is in proportion to the number of items in our line. The more items we have and the more small runs we are obliged to make, the greater is our need for space. And all these junk items, Boss, are, as far as I am concerned, just a damn nuisance and eventually we will have to unload them anyway because they just don't pay.

"It strikes me that neither we, nor anyone else can service the entire public. We could not do it even if we had a hundred thousand items in our line. Hence, it seems obvious that if our own specialties do not justify the cost of sending a man into a given territory, then let's not send him. If a territory will not yield sufficient volume from the sales of our own specialties, we should not be fool enough to add a lot of 'junk' items to our line in order to 'carry the expense' of the territory.

"Another thing, Boss, the more items you give a man to sell the more he is diverted from selling the specialties which are our bread and butter. If a territory is worth sending a man into, and if that man can get enough volume on our specialties to justify his expenses, let's not worry because he has a little extra time on his hands. Let him use that time planning his next calls or let him play solitaire, but for God's sake, don't let our sales managers bamboozle us into building up our line with junk. Don't ever fall for the idea that just because a competitor carries a certain item, we must carry a similar item, too.

"All salesmen and sales managers like to see climbing sales curves. One very rarely meets a salesman who is more profit conscious than volume conscious and ours are no exception. It is the easiest thing in the world to add items to the line, Boss, but believe me, it is a hell of a job to get rid of them, even after everybody agrees they are duds. There is always somebody in the sales department who can put up a convincing argument to the effect that his trade won't buy the specialties unless we also can provide certain competitive items. Such an attitude is not complimentary to our specialties, Boss, nor is it a compliment to the ability of our salesmen themselves.

"Another argument they will give you day in and day out, is that you need bumper items in order to meet competition. This is certainly a weak argument. If our competitors are fools enough to decrease their profits by selling a lot of miscellaneous items let them go to it. As a matter of fact, we ought to encourage them to do it, because the more items they add the easier it is for us to wade in and lick the hell out of them. Let's stop kidding ourselves.

"I have heard all the arguments for adding staple items to a more or less specialty line. I have heard these arguments in 40 or 50 outfits and the end result is always the same. More items; more inventory; more warehouse space; more records; more laboratory control; more plant space; more equipment, less profit, more headaches. All you have got to do, Boss, is take a

look at the history of the trade. Go back 30 years and look at the relative positions of the leading outfits of the industry. Most of them were physician supply houses, they tried to supply everything to everybody. When it became apparent that such a policy was economically unsound, some of the far sighted houses got wise to themselves; they unloaded the junk and began to concentrate on specialties.

"For instance, compare Abbott's financial statement with ours or with most anyone else's for that matter, and you can see the end result of sticking to specialties. Abbott's net profit figures are larger than the gross sales of most of the firms in the trade, and Boss, take it from me, they didn't build that kind of profit on zinc ointment, A P C Tablets, milk of magnesia and sundry imitations of competitor's specialties.

"So before we have added many more profitless items to our line, let's get wise to ourselves and take stock of where we are going. Somebody must make the staples, of course, but let the fellow who is equipped to do a mass production job on such items, have all the business. Let's build enough specialties so that we are always protected against research obsolescence and when we add items to our line, let's drop items that are dying and let them be 'our' items and not items that every Tom, Dick and Harry can make."

Yours truly,
Joe Doakes
Plant Manager

Employee Examinations

Some time ago I commented on the value of repetitive physical examinations for regular employees and selective examinations for new employees. I warned then of the danger of giving employees the impression that they are being guinea-pigged by excessively detailed examinations. I wish to repeat that warning, and to express the fear that excessive examinations of employees may become a source of trouble.

One manufacturer recently expressed to me the method which he proposes to employ in the post-war period "to fight the unions." In brief, he proposes to make his examinations for new employees so strict mentally and physically, that only an Atlas with the brain of an Einstein will get a job. He then proposes to pay these hand picked geniuses wage scales far in excess of the average and thus will he not only keep the unions out of his company, but he will also have an organization of exceptionally high type people.

I have never heard anything quite as silly as that in my life. In the first place, Army examinations show that only one man in about a dozen meets physical requirements. As a matter of fact, the Army and the Navy had to lower their standards very materially in order to build up their organizations. It is clearly evident that unless manufacturers propose to have the Government support everyone who is physically substandard, someone must employ the people who have heart murmurs and bad eyesight and incipient lung conditions, and so on.

The proper procedure, I think, is to classify the various jobs in an organization and then match the jobs and the persons. In view of the employee compensation laws, it is perfectly proper to establish a means of relieving the company of responsibility through the employment of physically substandard persons. There is a way of doing this by having employees sign waivers based on medical certification of their condition.

The other remark of my friend about fighting the unions is an indication that there are still many manufacturers who would fight the unions rather than cooperate with them. What a futile attitude that is! The unions are here to stay. Fighting them will not dispose of unions; on the contrary it will strengthen them very materially. I think we, as manufacturers, are responsible for many of the abuses in the union movement about which we complain so loudly because we are not far sighted enough. So let's begin to think more realistically about employee organizations.

Cosmetic Future

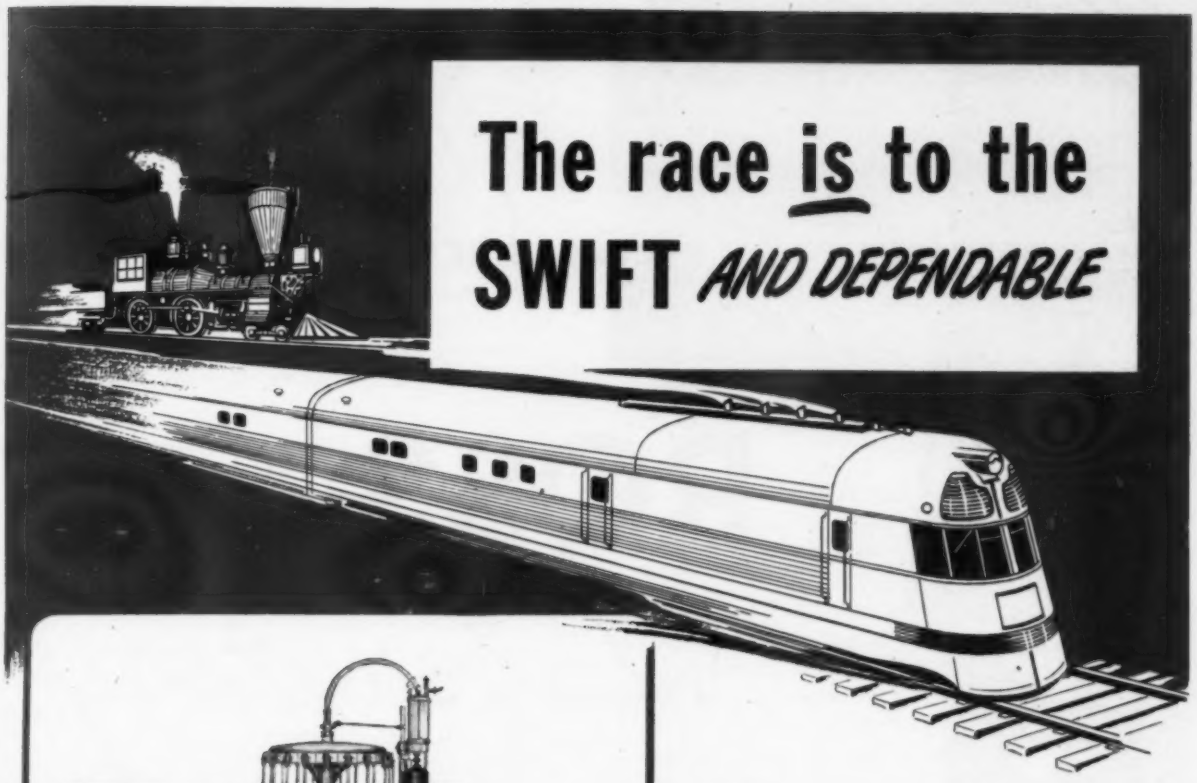
After the war is over it is my belief that the cosmetic industry will witness an upsurge similar to, but infinitely greater in volume, than the upswing that followed the last war. During the war years business has been good—some firms having had an increase as much as 100 per cent in spite of restrictions and shortages of materials. But mark my words, the post-war boom will be infinitely greater. There are several reasons for believing this.

You will recall that World War I marked the birth of the industry in reality. During that war lipstick, rouge and face powder had become respectable. A variety of creams, particularly cleansing cream, came into daily use and beauty shops sprang up everywhere. But the difference between the last war and this consists in the fact that during those days the use of rouge, lipstick, nail polish, etc., did not extend into the high schools—the use of such products being confined to adults.

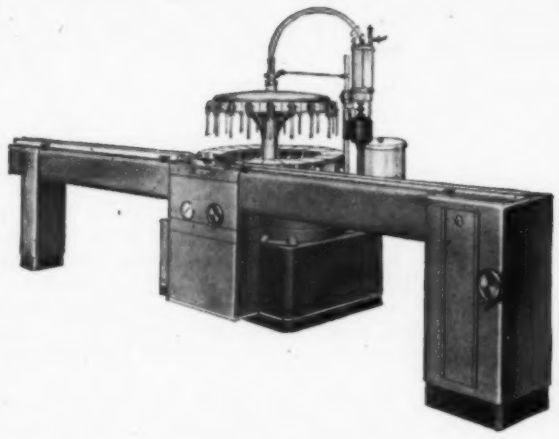
But now high school and even grammar school girls are using cosmetics lavishly. Children are demanding them too, and enterprising manufacturers have introduced sets for mere infants.

In addition to a much broader use of cosmetics, there is no doubt that masculine consumption of cosmetics will increase enormously. The Army has taught soldiers to use insect repellents and to lather themselves with camouflage paint. Therefore the stigma of using cosmetic products for specific purposes has been removed. Anti-perspirants and deodorants will certainly be taken up in increasing measure by men. Already I've noticed soldiers and sailors in Pullman wash rooms using deodorant creams, powders and toilet waters without fear of ridicule by their mates.

So, if you are planning a post-war plant, better make it twice as big as you think you'll need. I'll bet that by 1950 the volume of the cosmetic industry will have doubled what it is now. Wanna bet?



The race is to the SWIFT *AND DEPENDABLE*



Completely automatic, semi-automatic, hand-fed equipment to clean, fill, close, convey jars, bottles, tins, collapsible tubes.
Filters • Pumps • Percolators

The machine age with the constant acceleration for production indicates unmistakably that THE RACE IS ALWAYS TO THE SWIFT AND DEPENDABLE. Still greater speed will characterize those machines which will play leading roles in postwar operations .... such as the . .

KIEFER AUTOMATIC ROTARY VACUUM FILLING MACHINE

Fills all liquids whether light, heavy, foamy or syrupy.

Deliveries when permissible.

ARMY NAVY

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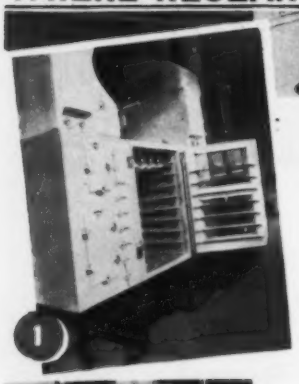
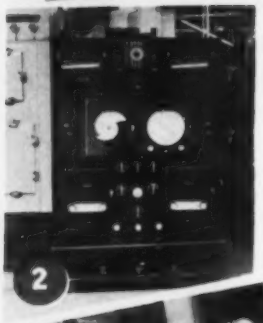
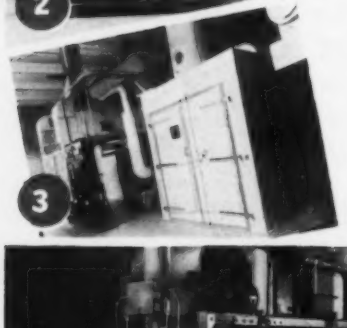
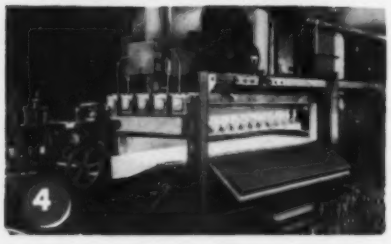
The ROSS Laboratory









1.—Tray Oven with dehumidification, humidification, convection, Infra Red.

2.—Control Panel for tray oven equipped with timing device.

3.—Batch Oven for temperatures up to 600° F.

4.—Conveyor Oven equipped with conveyor and Infra-Red lamps. Operating speeds up to 300' per minute.

These are but a few of the many testing apparatus units that are available in the Ross Laboratory.

Equipped to permit commercial tests, practically reproducing actual field conditions, this complete, modern Ross Laboratory is available to determine for you the best ways and means of solving industrial heating, curing and baking problems, after original development work has been completed.

Full sized air heaters, direct and indirect, using all types of fuel; tray, batch and conveyor ovens interconnected for high, medium, low temperatures and equipped with every type of control; devices for timing and weighing; special equipment to test radiant gas burners and Infra-Red lamps;—all available for providing conclusive tests to determine attainable results.

Consult us concerning the services of this unusual Ross Laboratory. A copy of our descriptive Brochure DC-2 will be sent to you upon request.

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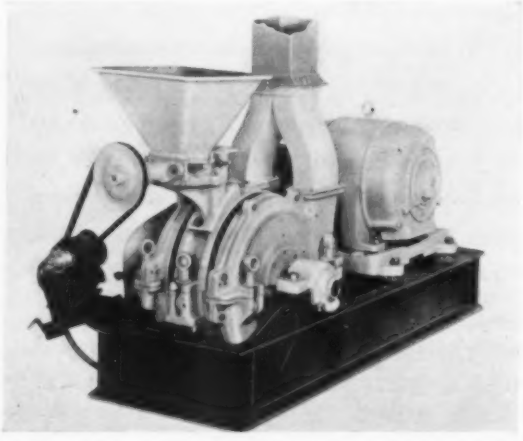
Pilot Plant Equipment

When you are equipping your pilot plant you can get a lot of useful equipment from the Reynolds Electric Company, 2650 West Congress Street, Chicago 12, Illinois. This outfit makes various types of equipment for hotel and restaurant kitchens. You can, for instance, get all types of mixing bowls and mixers suitable for liquids, pastes and powders up to 22 quart capacity. You can get all manner of emulsifying equipment. You can get chopping, grinding and slicing equipment. You can get colander units which, although designed for straining purees, can be used as well for straining flue or gelatin substances. Likewise you can get a lot of very small steam jacketed kettles and bowls.

Screenless Pulverizer

The Mikro-Atomizer, a new mechanical, screenless pulverizer for the efficient production of ultra fine powders from 1 to 25 microns, has been announced by the manufacturers, Pulverizing Machinery Company, Chatham Road, Summit, New Jersey. The advent of this new machine marks the biggest development yet recorded for grinding in the low micron ranges.

Made by the makers of the well-known Mikro-Pulverizer, this new compact and highly efficient mill has been developed to produce powders of a fineness far beyond the ability of the former equipment. The new Mikro-Atomizer permits guaranteed performance to particle sizes as low as 1 to 2 microns on certain materials. In addition, it provides a much cooler operation.



The principle of operation in the new Mikro-Atomizer is a most simple one. The raw material is fed into the mill from the customary hopper. After its initial breaking down by the rotating hammers, it is atomized by an air stream which carries the dispersed particles into a separator wheel, where they are whirled about at the rate of 4000 to 7000 RPM.

A fan adjacent to the separator wheel exerts just enough suction to draw out the finest particles and discharge them. But, the centrifugal force imparted by the separator wheel so increases the gravitational weight of the coarser particles that they resist the pull of the fan, and drop back into the path of the hammers where they are beaten and rebeaten until they are fine enough to yield to the pull of the fan.

This pull, or aerodynamic drag, in opposition to centrifugal force, is the unique underlying principle in the design of the Mikro-Atomizer. The relationship between the radius and width of the separator wheels (centrifugal force) and the radius and width of the fan blades (aerodynamic drag) determines the fineness and capacity of the machine on any given material.

This new equipment is offered for applications where the production of ultra fine powders is a requisite.

Great Moments

In the course of a lifetime it rarely is given a man to witness truly great moments of emotion. I am fortunate indeed in having witnessed at least two such unforgettable moments.

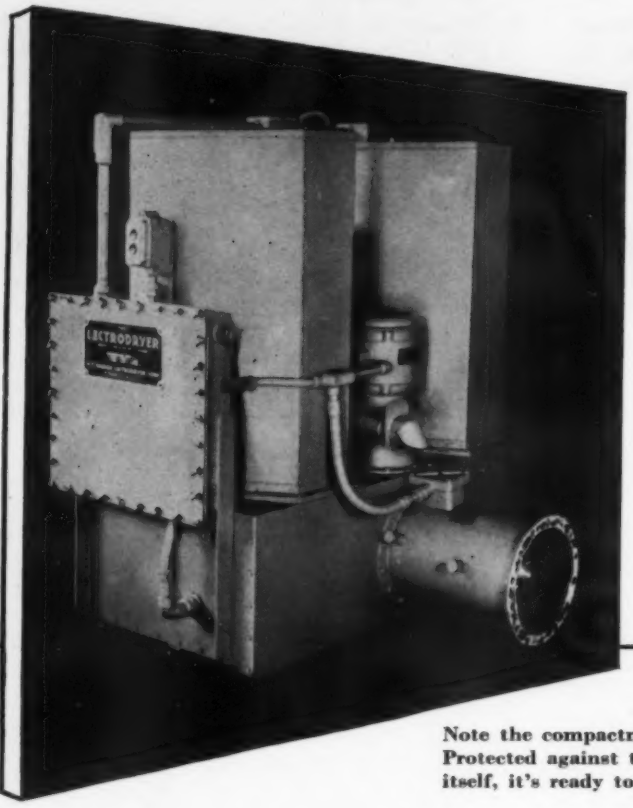
One was the President's prayer at the beginning of "D" Day. I was sitting in the cocktail lounge of the DeWitt Clinton Hotel in New York. It was about ten in the evening and the bar was filled with the usual crowd of noisy drinkers, a good many of them pretty well on their way. At a table near me a couple of drunken salesmen, sitting with a drunken trollop between them, were louder and more vulgar than usual even in such a condition.

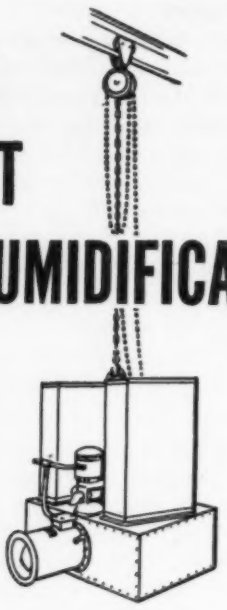
The radio announced simply: "The President of the United States."

Instantly a deep silence fell. No one drank. No one moved. The waiters, with instinctive reverence for so great a moment in history, froze in their tracks and bowed their heads. No glass clinked. No one smoked. The drunken salesmen and the drunken whore were reverently silent too as the President uttered his brief and eloquent plea to our father, God. The atmosphere was electric with emotion, surging with each diapasonic word of that beautiful, simple prayer.

Then, suddenly as it had begun, it was over. Yet, no one moved for a full minute. The drinking and

FOR SPOT DEHUMIDIFICATION





Note the compactness of this Lectrodryer unit. Protected against the weather and complete in itself, it's ready to go to work most anywhere.

Spot this Lectrodryer where you need dehumidification, connect it to power, and it's ready for work. Move it here or there tomorrow, as DRYing needs develop; this Lectrodryer isn't choosy.

In this Lectrodryer designed for "spot" service, you see the reason for this recommendation: Have your engineers determine *where* they need a DRYer. Then let our engineers tell *how* to do that DRYing job. A standard Lectrodryer may handle the assignment satisfactorily. It may require something special but, in any case, your men are spared the necessity for dealing with unfamiliar tasks.

Air, gases and many organic liquids are dried DRY by Lectrodryers. Processes are standardized, boosting output and cutting costs. Products are more uniform and higher in quality. May we help you determine if they'll do the same for your production? PITTSBURGH LECTRODRYER CORPORATION, 309 32nd Street, Pittsburgh 30, Pennsylvania.

In England: Birmingham Electric Furnaces, Ltd., Tyburn Road, Erdington, Birmingham.
In Australia: Birmingham Electric Furnaces, Ltd., 51 Parramatta Road, Glebe, Sidney.

LECTRODRYERS DRY WITH ACTIVATED ALUMINAS

PITTSBURGH
LECTRODRYER
CORPORATION

Reg. U.S. Pat. Off.

talking started again, not as loud as before, and the drunken salesmen with their companion of the demi-monde, were sobered too and spoke now in whispers.

At that moment, I knew I had lived in a great time.

The second incident occurred in the plant of Pond's Extract Company a long time later—so it seems—yet it was a resurgence in an individual of that emotion to which the President's prayer gave birth. It was an aftermath and a sharp counterpoint.

I was sitting in the Engineering Department of the plant at Clinton, Connecticut, when an old man—one of the local carpenters—came in. He was dressed in faded overalls, clean and well patched and his lean, ruddy Yankee face was grim. In the clipped monotone of the Connecticut Yankee he said to Mr. King, Chief Engineer of Pond's:

"Heard from your boy yet?"

"No. Heard from yours?"

"Yes. I got a letter. I ain't ever goin' to read it agin though. I couldn't stand to read it agin. His comp'ny was caught bad right afore Christmas. Most of 'em killed, my boy said. He ain't never goin' to be the same agin, my boy said. Christmas, he said, ain't never goin' to mean nothing to him no more, with the memories of all them dead boys a-crowdin' his mind—fellers that he'd et with an' slept with for nigh onto two years. 'Taint' good when a boy ain't got no heart to smile on Christmas . . ."

All this and much more in a clipped Yankee monotone surcharged with seething suppressed emotion. The old man, with an expressionless face, spoke for fully fifteen minutes, during which no one spoke, no one moved.

And when at last he had finished I knew again I had witnessed a great moment. For that old man's reaction to a letter from his son was the perfect epitome of the horror of war.

Building Plans

Blueprints are crackling all over the industry. Everybody is planning to build something or other if only it is a new "Chic Sale." In all this dreaming and planning let us pause to assay the place of the architect in a building program. Unfortunately, a number of manufacturers have already made mistakes in assuming that a building program begins with the hiring of an architect. In reality, a building program should "end" with the hiring of an architect because the architect should start with a program worked out in detail as to type of structure, size and location on the plot. As a rule, the architect does not know anything about your business and it is unreasonable to suppose that he can become an expert in it after a casual study of a few weeks. The architect is primarily an artist. It is up to you and your production men and engineers to build the skeleton around which the architect is to create an imposing envelope.

In selecting an architect be sure that he has had a lot of factory experience. Don't assume that because an architect has built up a reputation in designing private dwellings, public buildings, etc., that he is capable of applying his talents with equal facility to designing a factory. There are, in factory design, fundamental considerations such as the importance of head room, wide bays, adequate sub-surface drainage, provision for expansion, internal and external traffic control, etc., which can be appreciated only by architects who have had a lot of industrial experience.

Every architect likes to create something flashy, ultra-modernistic or imposing because structures of this type get a lot of publicity regardless of whether or not they are effective as industrial units. Architects will mouth meaningless phrases about "the treatment of mass," organic functionalism," and a lot of other rubbish. It is all false talk and if we fall for it, God help us!

Few architects have an adequate conception of material handling, hence they are prolific sources of screwball ideas. One recently told a client of mine that the lessons of this war clearly indicate that the next one will be fought with robot bombs. Therefore, the thing to do was, not to build a large factory building, but a series of small ones dispersed around the plant site, so that in the next war, if the plant is blitzed, the small separated buildings would have a better chance of survival than a single large one! By God, that certainly takes the cake! The old man had fallen for the idea without really thinking, until I started to kid him about it.

Remember that an architect is primarily an artist; he also is an expert on materials of construction, lastly he is a structural engineer. But he definitely is not a production expert, neither is he an expert in your industry. Most architects are good eggs and when they know that you are holding them in a tight harness they will pull steadily, but give them carte blanche and—well, don't say I didn't warn you!

Ross Laboratory

While it is not the object of the new Ross laboratory to engage or assist in purely development work, it can prove of immense value to industrial concerns seeking to determine the most efficient methods for drying operations and the facilities of the laboratory are available to all reliable concerns.

Information as to the services offered may be obtained by writing to the J. O. Ross Engineering Corporation, 350 Madison Avenue, New York.

Pallet Loading

The gluing of pallet loads of corrugated or solid fiber shipping containers, developed recently by the Army Quartermaster Corps and Materials Handling Section, Bureau of Supplies and Accounts of the Navy Department in collaboration with National Adhesives, has now been adapted to wooden boxes.

As the result, the impressive savings in man hours, scarce steel strapping and in some instances, in containers themselves, can now be realized by those shipping in wood. While the gluing procedure differs some-

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what, National's Pallet Adhesive No. 4 is satisfactory for both types of containers and appropriate specifications will be published shortly.

The method found most satisfactory for unit loading wooden boxes requires that strips of ordinary 60 point chipboard 4 inches in width be glued both sides and placed in a cross-strip both on the pallet base and between each succeeding layer of boxes comprising the load. Thus, the glued stock skirts the perimeter of the pallet and each layer of boxes thereon and forms an "X" within the border design.

The chipboard acts as a cushion—absorbing much of the shock to which such loads (unstrapped) are subjected in domestic handling and shipping. Further, it ensures contact between the layers of boxes despite any unevenness of the mating surfaces. Severe angle drop tests of unit loads, each weighing over a ton, were conducted by the Naval Supply Operational Training Center at the Naval Supply Depot, Bayonne, New Jersey. These tests prove the ability of National's Pallet Adhesive No. 4 to withstand destructive forces and stresses of car loading and cross country handling, and amply to safeguard against the side-slipping of individual units comprising the glued load. In fact, all ultimate failures, in tests carried to non-commercial extremes, were of the chipboard strips which parted in about the middle—leaving close to 30 points of board firmly adhered to each wooden surface.

National's Pallet Adhesive No. 4 is described as a cold, ready-for-use liquid glue that sets rapidly and dries to a moldproof, moisture-resistant film. It is said to be both inexpensive and readily available. Application to the chipboard may be made either by brushing the strips or by immersing a continuous web of the stock in a reservoir of adhesive—regulating the film by means of squeeze rolls.

The advantages of glued unit loading are too multiple to detail here, and vary somewhat depending upon individual circumstances, but all carload and truck load shippers using wood or fiber containers would do well to investigate the applications of this system to their wartime shipping problems, as well as to consider its postwar possibilities.

Send for A Copy

A new bulletin entitled "Fluorochemistry" has just been published by Ultra-Violet Products, Inc., Los Angeles, manufacturers of fluorescent ultra-violet lamps.

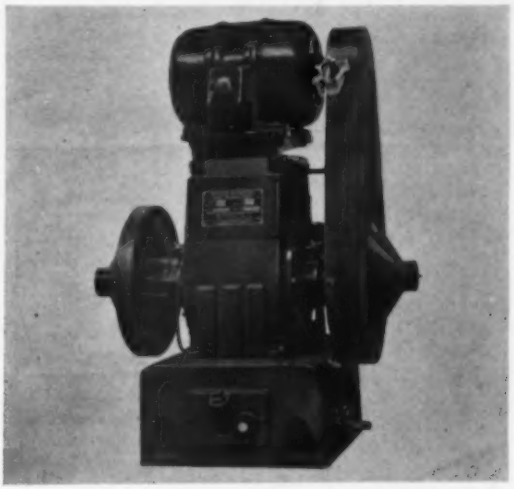
It presents the basic concept of luminescence and provides information fundamental to the new applications of fluorochemistry. The theory and utility of fluorescence is fully discussed. Every chemist and physicist interested in research will find this article contains many helpful facts applicable to their studies.

This bulletin known as No. 1, is one of a series printed in form for convenient filing. The service is available without cost or obligation upon request to Ultra-Violet Products, Inc., 5205 Santa Monica Blvd., Los Angeles 27, California.

New "Microvac" Pump

A new high vacuum pump, designed to produce and maintain vacuum as low as five microns absolute pressure in continuous service, is being marketed by the F. J. Stokes Machine Company, Philadelphia, manufacturers of high vacuum equipment.

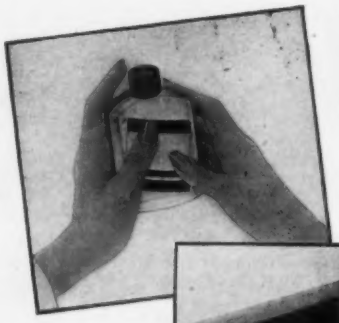
It is stated that this No. 212 E "Microvac," an oil-sealed rotary type pump, as were previous Stokes high vacuum pumps, is smaller, lighter in weight, simpler in design, more rugged, and has both higher volumetric efficiency and greater capacity than the model it supersedes. The pump is rated at 100 cubic feet displacement at 350 r.p.m.

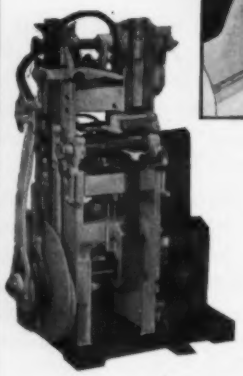


This pump employs only four internal moving parts; a shaft with keyed-on eccentric, a rotating one-piece piston and slide, and the hinge bars. This design eliminates dead space or clearance, permitting the discharge of air at the end of each stroke to be complete. There can be no re-expansion to impair pump efficiency.

The only valve, on the discharge side of the pump is very sensitive to pressure differentials and made to discharge, without injury, sudden slugs of water or other liquids which may be sucked into the pump. The valve seat is of stainless steel, ground to an accurate surface, readily accessible, and replaceable.

The pump is direct motor driven with V-Belt drive and motor mounted on an adjustable hinged base. Floor space requirements are held to a minimum by using a top-mounted motor. Pulley is carefully balanced to act as a flywheel and assure smooth operation. Oil baffles are built into base to remove entrained oil from the exhaust. Patented centrifugal oil clarifier can be supplied, and is recommended for many services, to continuously remove condensed moisture or foreign matter from the sealing oil before it is returned to the interior of the pump. Many other improved features add to the economy and dependability of this pump. For more details and catalog, write F. J. Stokes Machine Company, Philadelphia 20, Pennsylvania.





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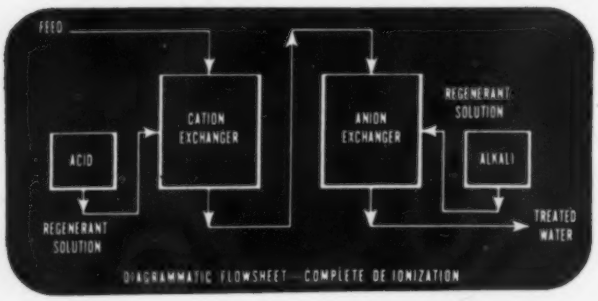
A Dorr Company engineer will gladly give you full details on the Dorrco D-I System. There is no obligation. Telephone or write our nearest office.



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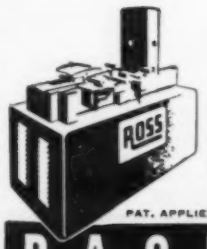

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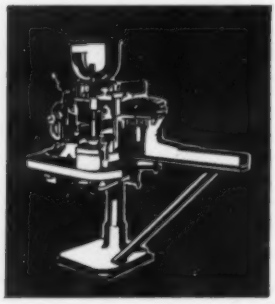

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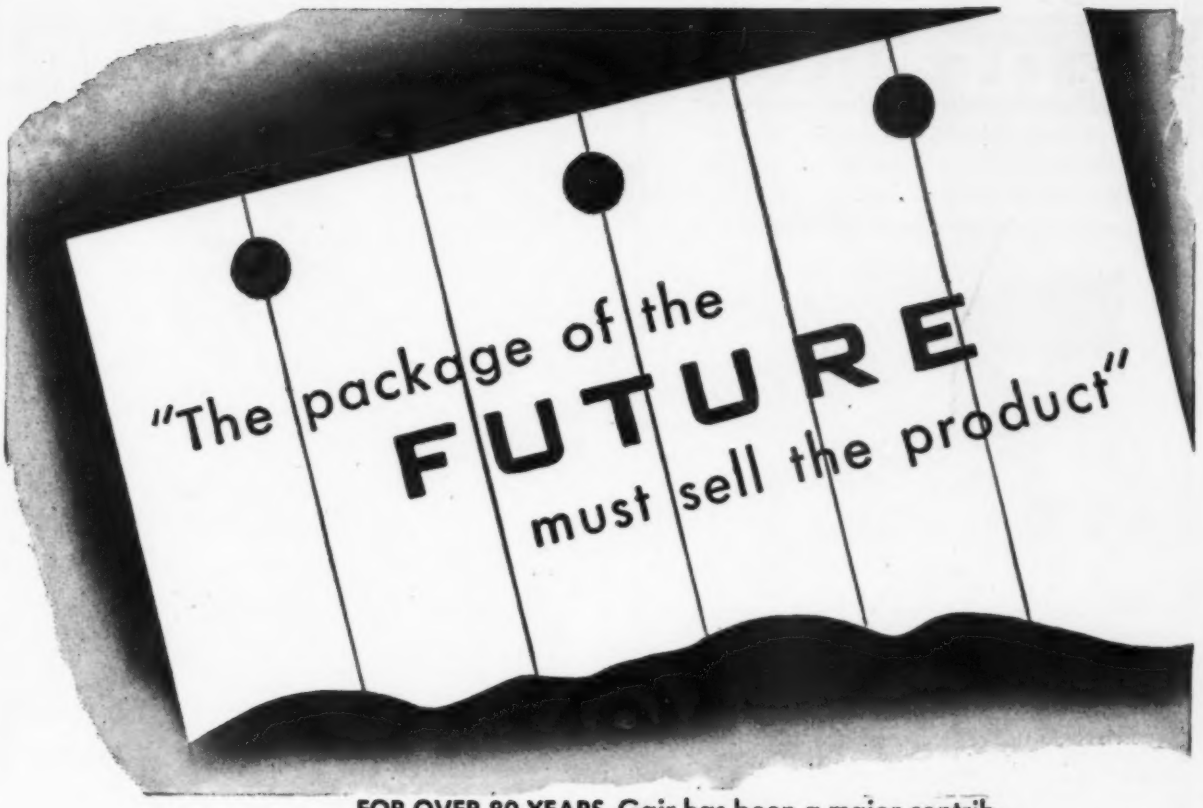

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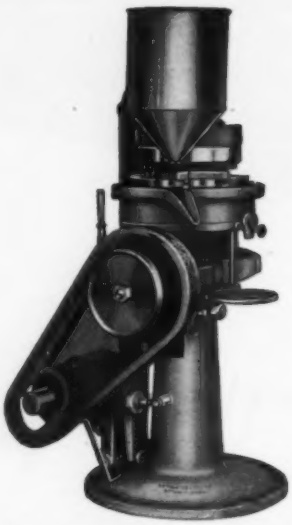

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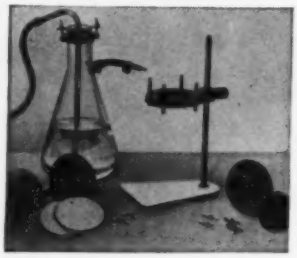

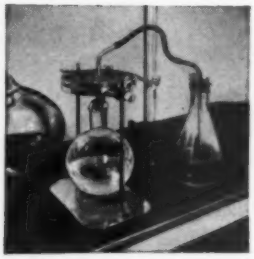

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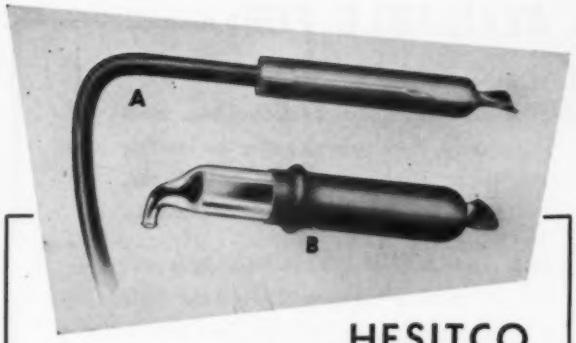

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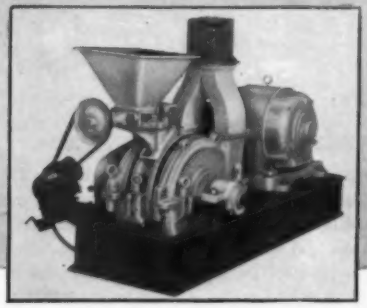

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Industry's Books

Outline Of The Amino Acids And Proteins, Edited by Melville Sahyun, M.A., Ph.D., Vice-President and Director of Research, Frederick Stearns and Co., 251 pp., Reinhold Publishing Corp., New York, $4.

The purpose of this book is to outline in a simple and readable manner the essentials of the chemistry and the biochemistry of amino acids and proteins. Contents: Discovery Of The Amino Acids, Melville Sahyun; Proteins: Occurrence, Amino Acid Content and Properties, Carl L. A. Schmidt; Protein Structure, Henry B. Bull; Hydrolysis of Proteins, Melville Sahyun; Synthesis and Isolation of Certain Amino Acids, Herbert E. Carter and Irving R. Hooper; Methods of Analysis For Amino Acids and Proteins, David M. Greenberg; Relation of Amino Acids and Their Derivatives to Immunity, Michael Heidelberger; Relation of Amino Acids to Biologically Important Products and the Role of Certain Amino Acids in Detoxication, Armand J. Quick; Metabolism of Proteins and Amino Acids, William M. Cahill; Intermediary Metabolism of Individual Amino Acids, William M. Cahill; Nitrogen Equillibrium and the Biological Value Of Protein, William M. Cahill and Arthur H. Smith; Amino Acids and Proteins in Nutrition, Madelyn Womack and Charles F. Kade.

Diseases Of The Digestive System, Edited by Sidney A. Portis, B.S., M.D., F.A.C.P., Associated Professor of Medicine, University of Illinois Medical School, Second Ed., 932 pp., Illus., Lea & Febiger, Phila., $11.

This second edition offers the most complete work that has yet been published in this field. In this edition the chapters have been rearranged. The physiology of each organ is now taken up immediately before its clinical discussion. The consideration of gastrointestinal complaints of extra-abdominal origin has been placed at the end in the belief that an understanding of the fundamental problems of digestive disturbances enables the physician to evaluate these manifestations and arrive at a more accurate diagnosis. The effects of emotional stimuli on the gastrointestinal tract has opened a new field for the gastroenterologist and each contributor in this edition has discussed this aspect of the subject. The fifty contributors have been most carefully selected. Each has to his credit real achievements in this field and each has made a special study of that branch of the subject which he discusses.

Fundamental Principles Of Physical Chemistry, by Carl F. Prutton, Ph.D., Professor of Chemistry and Chemical Engineering, Case School of Applied Science, and Samuel H. Maron, Ph.D., Associate Professor of Physical Chemistry, Case School of Applied Science, 780 pp., The Macmillan Co., New York, $4.50.

The author's aim in writing this text on elementary physical chemistry is to place in the hands of those interested in this subject a book which covers the fundamental principles of the subject in a thorough, sound, up-to-date, and clear manner. Throughout the book considerable attention is devoted to the experimental aspects of physical chemistry. This is done expressly, because it is felt that a student can understand better what he is dealing with when he has some idea how the quantities involved are obtained. At the end of each chapter are given bibliographies, to which the student may turn for further details, and extended lists of exercises to test his familiarity with the subject matter and to develop in him facility in handling equations and data.

Formaldehyde, by J. Frederic Walker, Chemical Research Division, Electrochemicals Department, E. I. du Pont de Nemours & Co., Inc., American Chemical Society Monograph Series, 397 pp., Reinhold Publishing Co., New York, $5.50.

The growing importance of formaldehyde as a commercial chemical, its many unique characteristics, and its varied applications have created a definite need for a systematic and critical account of formaldehyde chemistry. In this work first attention is given to how formaldehyde is normally produced. Following this, the book deals with the physical and thermodynamic properties of the various formaldehyde substances: the simple monomer (Chapter II), formaldehyde solutions (Chapters III-VI), and polymers (Chapter VII). Chapters VIII-XV are devoted to the chemical properties of formaldehyde and its reactions with various types of inorganic and organic chemicals. Chapters XVI and XVII deal with formaldehyde detection and analysis. Hexamethylenetetramine (Chapter XVIII), which is produced by the reaction of formaldehyde and ammonia, must receive special consideration in any discussion of formaldehyde substances. Although this compound is a distinct chemical entity, it plays an important industrial role as a special form of formaldehyde. The industrial applications of commercial formaldehyde substances, viz. formaldehyde solution, paraformaldehyde, and hexamethylenetetramine are discussed in Chapters 19 and 20.

Civil Aviation And Peace, by J. Parker Van Zandt, Volume II of a series under the general title: "America Faces the Air Age," 157 pp., The Brookings Institution, Washington, $1.

The purpose of the first volume of the series—"The Geography of World Air Transport"—was to outline the basic setting of the air transport problem. It undertook to reappraise our conventional ideas about the world and to review some of the fundamental geographic and economic relations which should govern international air policy. The object of this second volume—"Civil Aviation and Peace—is considerably broader. Here the basic conflict over civil aviation is analyzed in order to discover, if possible, how best it may be resolved. Since concerted international action should serve a common purpose, the author has sought to develop a policy which would be mutually beneficial to all participating nations. In his search for such a basis, he has outlined a program which he shows should do much, if generally adopted, to assure the economic stability, prosperity, and consequent peace of the world.

ADVANCING THERAPY

Ethyl Chloride Spray for Sprains

After tests in a series of over 100 cases in the orthopedic clinic of a large training camp hospital, R. Bingham (*Military Surgeon* 96:170, 1945) came to the conclusion that the use of an ethyl chloride spray (as a surface anesthesia) combined with active motion is an effective method of therapy for the treatment of sprains and minor injuries in which the skin is not broken. With this treatment the patients secure symptomatic relief and a return of useful function to the injured part. The immediate recovery varies from 60 to 90 per cent, depending on the severity and duration of injury. The majority of the patients can be returned to duty and their period of disability averages less than three days. No strapping with adhesive tape or the application of plaster casts is required. This spray treatment will not "mask" fractures, severe deep tissue injury or disease. In this respect it is superior to the injection of a local anesthetic. The treatment is simple and inexpensive, and disability and hospitalization are reduced.

Parenteral Use of Amino Acids

The situation frequently arises, remark A. R. Curreri and O. V. Hibma (*Wisconsin Med. J.* 43:609, 1944), wherein a patient cannot injest foods and it becomes necessary to supply body requirements by parenteral administration. It is possible by such means to maintain water balance, supply electrolytes in the form of sodium chloride, meet caloric requirements with glucose and provide vitamins. Until recently, however, it has been impossible to supply sufficient proteins which are so urgently needed for the repair of diseased or destroyed tissues. Proteins, as such, when injected into the blood stream produce violent reactions and it was, therefore, necessary to develop methods of breaking down the proteins to simple amino acids. Amino acids are not antigenic and hence do not cause sensitivity reactions.

When, a few years ago, solutions for parenteral administration, one containing 15 per cent and another containing 5 per cent of amino acids, were made available each product was tested critically in ten patients for reactions. All patients received from 350 to 450 Gm. of amino acids each over five to seven days. In no instance was a reaction noted if the rate of administration was three hours or more for each 50 Gm. administered. Since these original studies, 185 more patients have been given amino acids parenterally. Twelve reactions were observed in this series, but investigation revealed that all but two were due to pyrogen reactions. It is possible that the two isolated reactions were due, in these cases, to the inability of the liver to metabolize the amino acids.

From these studies, Curreri and Hibma concluded that amino acids can safely be administered by vein; that they can produce a positive nitrogen balance and can correct hypoproteinemia.

Ethyl Chloride for Skin Diseases

Because ethyl chloride has been extolled as a simple, effective and safe remedy for all varieties of dermatomycosis, J. H. Lewis and W. J. Morginson (*Arch. Dermat. & Syph.* 50:243, 1944) decided to try it in the treatment of trichophytosis. They reported that ethyl chloride spray, producing distinct frosting of the skin may be used without, harmful effects in the treatment of trichophytosis. It may be applied to all varieties of lesions, including those showing secondary bacterial involvement. Immediate clinical improvement, with subsidence of vesicles and pustules, healing of denuded areas, increased dryness of the skin and regression of hyperhidrosis, follows the applications of ethyl chloride.

However, ethyl chloride does not produce a cure or eradication of trichophytosis. Recurrences are experienced in practically all instances within ten days. Hence, they concluded that ethyl chloride may be used with advantage as an adjunct to the customary management of trichophytosis, particularly in the vesicular stage. It apparently promotes dryness of the skin, producing an antagonistic environment for the fungi.

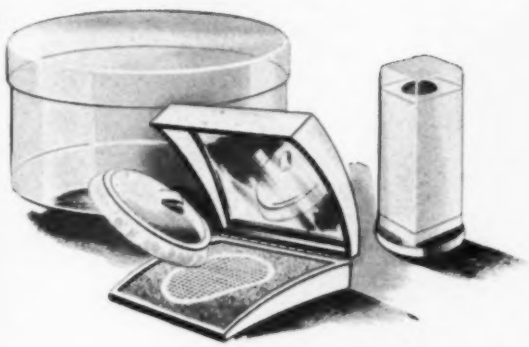
Value of Biosynthesized Vitamin B_1 Questioned

Not so long ago, considerable interest was aroused by reports of the biosynthesis of thiamine in the intestines of humans and animals. It was suggested that the formation of vitamin B_1 in the body might alter present concepts of the requirements for this nutritional factor. Although considerable amounts of thiamine have been found in human and animal feces, B. Alexander and H. Landwehr (*Science* 101:229, 1945) raise the question of whether this thiamine is readily available for body needs. They present evidence which supports the concept that the thiamine and cocarboxylose in human feces is of no nutritional value to the individual since it appears to exist largely within the bodies of bacteria and other organisms in the feces. Pointing to the possible sources of error in previous reports, they describe their own more physiologic experiments. A retention enema, containing twice the amount of vitamin B_1 found in the average 24-hour stool, was administered and retained for a full day. Not only was there no increase in the urinary thiamine excretion, but all the administered vitamin B_1 was recovered unchanged in the next 24-hour stool.

Vitamin E and Male Sterility

Writing in the *Urologic and Contaneous Review* (48:423, 1944), E. Shute reports on the effect of vitamin E upon sperm. He found that the oral administration of vitamin E improved spermatogenesis and resulted in prompt conception in 37 per cent in 27 sterile couples. This confirms the role played by the male in barren marriages and suggests an additional therapeutic approach to this complex problem of sterility. Ten mg. of alpha-tocapherol daily for 2 weeks is usually sufficient to prove whether or not spermatogenesis can be improved by this means. At this time reexamination of the semen should be undertaken. If improvement is noted, the therapy should be continued until conception occurs.

Why a comb is big packaging news



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Vitamin A and D Ointment for Fissured Nipples

Fissured nipples, notes J. C. Brougher (*West J. Surg., Obstet. & Gynec.* 52:520, 1944), are a common complication of lactation during the early postpartum period. This condition may cause suppression of milk secretion and provide bacterial organisms with a ready means of entry to deeper breast tissues. Preliminary evaluation of a vitamin A and D ointment in preventing and treating painful and tender postpartum nipples, with or without gross fissures, indicates that results with the vitamin ointment are far better than with other previously used methods and medicaments. The vitamin A and D content of the ointment used in these studies is derived from fish liver oils and its vehicle is essentially a suitable mixture of lanolin and petrolatum.

"Nitrite" Drugs and Blood Pressure

In testing the effects of "nitrite" drugs on blood pressure, J. C. Weaver, J. H. Wills and H. C. Hodge (*Am. Heart J.* 28:601, 1944.) gave glyceryl trinitrate, sodium nitrite, erythrol tetranitrate, mannitol hexanitrate and a placebo to normal and hypertensive subjects and made blood pressure measurements at brief intervals until the effect of the drug was over. Each of the 38 subjects received one or more of the substances and most received all four nitrite drugs. The patients were led to believe that the blood pressure measurements were a part of their routine management.

None of the patients had a fall in blood pressure after the administration of a placebo. The amount of the fall in blood pressure in hypertensive patients varied greatly, but the averages were as follows: glyceryl trinitrate 16/4 mm. of mercury, sodium nitrite 21/1 mm., erythrol tetranitrite 14/5 mm. and mannitol hexanitrate 12/4 mm. The period between the administration of the drug and the beginning of the fall in blood pressure was variable. For glyceryl trinitrate this interval averaged 2 minutes, for sodium nitrite 7 minutes, for erythrol tetranitrate 35 minutes and for mannitol hexanitrate 55 minutes after the drug was given. The average duration of blood pressure lowering was as follows: glyceryl trinitrate 20 minutes, sodium nitrite 62 minutes, erythrol tetranitrate and mannitol hexanitrate about the same, 256 and 252 minutes respectively. With the last two drugs there was wide variation in the duration.

Vitamin and Hormone Relationship

B. F. Seive, in the *American Journal of Digestive Diseases* (11:179, 1944), points out that numerous investigators have demonstrated that hormones are essential to normal nutrition and good health; experimental research on animals has proven that endocrine dyscrasias will bring about abnormalities and, clinically, endocrine dyscrasias can bring about marked nutritional disturbances. Conversely, vitamin imbalances have produced hypo- and hyperactivity of the endocrine glands. From these observations the author has noted the similarity between vitamins and hormones in their influence on nutrition and believes that one group affects the other. When he finds brittle nails, gray hair, pigmentation and fatigue associated with subnormal temperature, slow pulse, dry skin, atrophic papillae of the tongue and low blood pressure, he considers the state a true deficiency, the actual underlying cause of which may be the inability of the organism to utilize vitamins because of unrecognized or untreated endocrine dyscrasisas.

Thiouracil in Treating Thyrotoxicosis

Though quite new, reports are beginning to appear with frequency concerning the use of thiouracil in the treatment of thyrotoxicosis. Until recently, partial thyroidectomy was the treatment of choice for such conditions. However, after a series of observations on 27 unselected cases, A. M. Mussey (*Brit. Med. J.* 2:745, 1944) expressed the opinion that the hitherto unrivalled surgical treatment of thyrotoxicosis may, in the light of further experience, have to give way to medical treatment with thiouracil.

Indeed, D. M. Dunlop (*Pharm. J.* 153:246, 1944) feels that thiouracil can be given to all patients suffering from thyrotoxicosis with the virtual certainty that after a short latent period improvement will occur. According to K. E. Paschkis and his associates (*J. Clin. Endocrinol.* 4:179, 1944) the chief advantages of treatment with this agent would seem to lie in the possibility of gradual, controlled suppression of thyroid hyperactivity and the ready reversibility of the effect of the drug. This would seem preferable to sub-total thyroidectomy with its inherent dangers of post-operative myxedema and residual or recurrent thyrotoxicosis, entirely apart from the ordinary surgical risk, small as this may be. Disadvantages of the use of thiouracil are the possible necessity for permanent treatment and the possible development of toxic manifestations. It promises to be of great value in cases in which operation is inadvisable or contra-indicated.

However, all workers with this drug stress the importance of continued supervision of the patent, especially during the initial periods of th'ouracil administration. Careful and frequent check of the blood count is essential to avoid toxic effects.

Sulfonamides and Ear Infections

Since it appears that the administration of sulfonamides at the wrong time or in inadequate dosage may so mask the symptoms, distort the clinical picture, or interfere with the acquisition of immunity that the patient's life may be jeopardized, A. R. Dingley (*Brit. Med. J.* 1:747, 1944) has elaborated on several points for guidance in the treatment of otitic infections with sulfonamides. It is his opinion that the drugs should never take the place of necessary surgical drainage; treatment should be reserved for the period after incision of the membrane and bacteriological investigation; if fever continues, the appropriate sulfonamide may be used in full dosage, day and night, but not after the end of the second week; signs and symptoms of the condition must not be masked if suppuration continues after 2, 3 or 4 weeks; the drum head should be examined frequently, and if bulging, myringotomy should not be delayed because the condition then, although apparently improving, in reality is becoming perilous; persistence of deafness is a serious sign.

Succinylsulfathiazole in Urinary Infections

H. S. Everett, R. B. Scott and P. P. Steptoe, Jr. (*Am. J. Obstet. & Gynec.* 49:114, 1945) find succinylsulfathiazole effective in the treatment of urinary infections due to *E. coli*. When administered in daily doses of 0.25 Gm. per kilogram of body weight, the urine is usually rendered sterile in less than one week. Continuation of the drug in half the dosage for two more weeks seems to protect the patient against recurrence of infection. The drug has proved effective against infections which had proved resistant to other sulfonamides and to mandelic acid, but it is not effective against infections due to organisms other than *E. coli*. Because of its scant absorption and low toxicity, it is well tolerated by patients with impaired renal function or severe anemia who would tolerate other sulfa drugs poorly.

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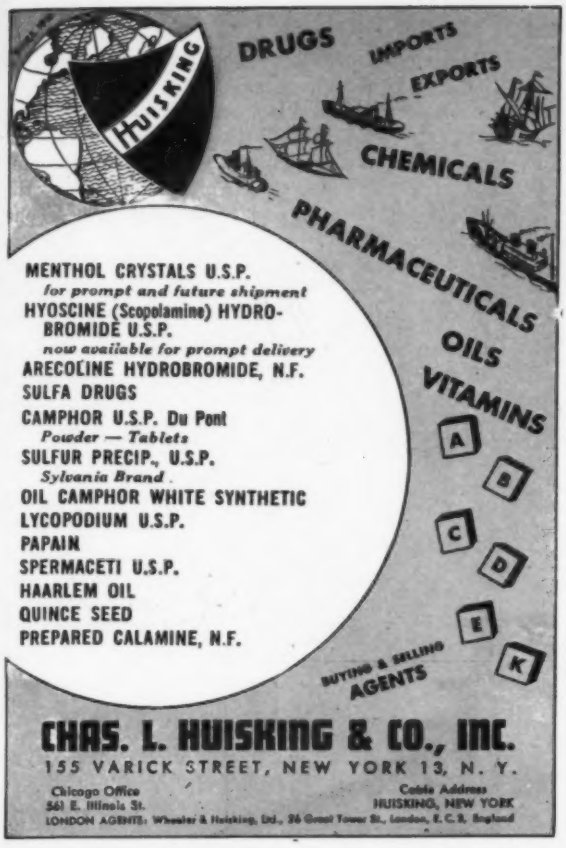

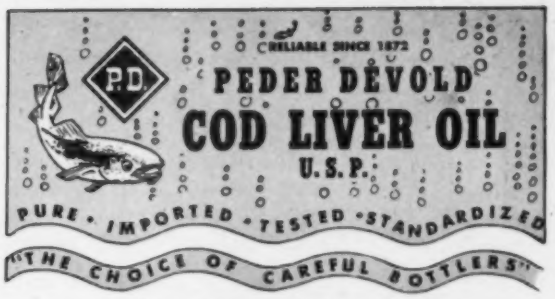

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Camphene Production Process

"Montecatini" Societa generale per l' industria mineria chimica has been issued Belgian Patent 445,702, covering methods for producing camphene. According to the report on the method in *Chemical Abstracts* (39:533, 1945) decomposition of pinene hydrochloride or bornyl chloride into camphene and hydrochloric acid is carried out under atmospheric pressure and at a temperature close to the boiling point in the presence of silica gel or of chlorides of heavy metals (e.g. iron, copper, aluminum, nickel) or of alkaline-earth metals, or of the oxychlorides or oxides of these metals. Bornyl chloride may also be decomposed in the gaseous state, pure or in admixture with water vapor, by passing at 150 to 350° C. through a catalyst mass composed of the same compounds.

Studies of Ocimum Canum

During the chemical examination of *Ocimum canum*, Sims, report C. R. Mehta and T. P. Mehta in *Current Science* (through *Chem. Abstr.* 39:207, 1945), it was found that a fatty yellow oil, obtained from the carbon tetrachloride and ether extracts of the powdered seeds, had the following constants:

Specific gravity, at 30° C.	**0.9206**
Index of refraction	**1.4707**
Acid value	**72.15**
Saponification value	**194.5**
Iodine value (Hanus)	**179.8**
Unsaponifiable matter	**1.25%**
Hehner number	**88.14**
Reichert-Meissel value	**0.6**
Polenske value	**0.3**
Acetyl value	**32.1**

An essential oil was also obtained from the fresh leaves of the plant.

Perfumer's Shelf

Orange Seed Oil

An item in *Chemical Preview* for January 1945 notes that a plant in Florida is extracting oil from orange seeds which provides a product that is suitable for flavoring and other applications. In Europe oils have been produced from tomato and grape seeds and apricot kernel. Walnut and avocado oils are now being sold in this country.

British Synthetic Camphor Patent

British Patent 554,636, granted to F. Schwartz, describes methods for making synthetic camphor. In this process, para-Cymene is treated with water or the constituents of water in the presence of a hydration catalyst promoting the addition of water to organic substances.

Coumarin in Drug Plants

In a discussion on the detection of coumarin in drugs, P. Cosparis and E. Manella (*Pharm. Acta. Helv.* 19:158, 1944) report that this substance was found in the fruits of *Petroselinum sativum*, *Laserpitium latifolium* and *Pastinaca sativa*. The fruits of anise, fennel, caraway and parsnip root did not contain coumarin.

Future of Vanillin

In discussing the future of vanillin, an essential in perfume and flavoring manufacture, M. Schofield (*Manuf. Chem. & Manuf. Perfumer* 15:359, 1944) points out that, although only the pods of *Vanilla planifolia*, a plant indigenous to Java, Mauritius, the Bourbon Islands, Madagascar, and more recently Mexico, furnish the exact flavor known as "vanilla," the natural extract has to meet the competition of vanillin, the methyl ether of protocatechuic aldehyde. Artificial vanillin first put an appearance on the market when eugenol from clove-stem oil was converted into isoeugenol and the potassium derivative of this was oxidized; and when production from other sources like guaiacol, pyrocatechol and piperonal passed from the laboratory stage to manufacturing operation.

The clove-stem oil method of preparation had the advantage of avoiding undesirable by-products; the guaiacol method, on the other hand, suffered from the formation of both normal and isovanillin when the aldehyde group was introduced into the guaiacol structure, these isomers being difficult to separate. Now, both methods are faced with competition from an alternative source of vanillin—namely, from the waste liquors formed in the manufacture of paper pulp. Despite much research yielding improvements in the clove-oil and guaiacol processes and the tendency for the market price of vanillin to follow the fluctuations in clove-oil prices, one pointer to the future supply situation is the statement that the liquor from just one Canadian paper mill can furnish more than sufficient vanillin to supply the world's markets.

The relative positions of natural vanilla, artificial vanillin from clove-stem oil and that from sulfite cellulose liquors in wartime is somewhat obscure. With supplies of vanilla from Java and Madagascar (until recently) cut off, it would be expected that the artificial product would increase; but Mexico among other countries has increased production of the natural commodity for the market. Farley in the United States deprecates the use of artificial vanillin and of coumarin and heliotropine as retainers with high-grade natural vanilla, since coumarin additions leave a persistent metallic taste, while vanillin and heliotropine may cause deterioration on standing or dilution. The advertisement of firms marketing vanillin "100% made from clove oil" (particularly in the case of firms noted for "synthetics") betrays a preference of users for the clove oil rather than the waste liquor product.

However, this tendency ignores the fact that the vanillin from American and Canadian paper mills is 100% pure and satisfies the demands of the flavoring and perfumery trades. Since such mills can produce far more than the world's present demands for vanillin, this has given rise to the view that vanillin may become an intermediate for the production of organic chemicals.

Essential Oil Production in Texas

The following report by J. H. Sorrels, originally appearing in the *Chemurgic Digest* (4:70, 1945), presents information of pertinent value to those interested in the domestic production of essential oils:

New crops for diversification in agriculture are desirable for the Texas farmer. About three years ago, the Agricultural Experiment Station and the Engineering Experiment Station of the A. & M. College undertook a cooperative study to investigate the possibilities of an essential oil industry in Texas. This was not an unnatural line of study, for there was already estab-

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SYNTHETIC FLOWER OIL
SWEET LILAC

An excellent specialty for use in compositions requiring the sweet fragrance and freshness of lilac blossoms.

LILAC No. 13
LILAC No. 14

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LILAC No. 34

A lilac vegetal fragrance, excellent for men's preparations including after shave talc.

COMPOUND OIL LILAC No. 14125

An exceptionally fine, low-priced lilac compound. Has a very characteristic, flowery lilac note which has unusual lasting properties. It is non-discoloring and can be used with good effect in toilet and liquid soaps.

WATER MISCIBLE LILAC No. 14482

This specialty can be used in any preparation requiring a water soluble perfume, notably theatre sprays and wave set liquids which do not contain ethyl alcohol or isopropyl alcohol.

COMPOUND OIL LILAC No. 14495

This lilac is soluble in lotions and similar preparations having an alcoholic minimum content of 25%.

LILAC No. 47

For toilet soaps. Develops a fine, natural lilac after incorporation.

LILAC No. 49

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LILAC No. 6

A true lilac scent for creams.

LILAC No. 42

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LILAC . . .

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PLEASE UNFOLD THE PAGE

LILY OF THE VALLEY . . .

ONE of the major odor types, lily of the valley is a key fragrance in many of the trade's most popular offerings. The two products featured on the following page have a long and imposing record of successful applications in extracts, creams, powders and dozens of other cosmetics and toiletries—which is proof-positive that they can play a useful part in the creation of lily of the valley or related fragrances for the new, year-end lines you may now be planning. Why not investigate these specialties *now?*

PLEASE TURN THE PAGE

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LILY OF THE VALLEY

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lished in East Texas a nursery industry growing rose bushes by the millions. The blooms, with the exception of a very small number sold in nearby cities as cut flowers, were a loss so far as bringing in any revenue is concerned.

Buds of these roses had been successfully dried for medicinal and for sachet use, but nothing was known of the possibility of recovering the attar for commercial use. Three methods of oil recovery were tried; absorption, steam distillation, and extraction. In the absorption process, also known as the "enfleurage" process, moist air was passed over thin layers of roses and then over thin layers of lard. The attar was recovered from the lard by extraction with alcohol. In the steam distillation process, the flowers were placed in a still, steam admitted under pressure, and the vapors condensed. The pure rose oil was obtained by several redistillations. In the extraction process, a petroleum oil fraction was used as the solvent. The flowers were placed in the solvent for a short period of time, the solvent recovered by distillation and the concentrated solution of floral waxes purified by distillation under reduced pressure until all the solvent was removed. This substance, known to the trade as "rose concrete," was then extracted with alcohol to get rid of more wax material. The final product was a viscous oil known as "rose absolute" and containing the attar as well as a small amount of floral waxes. Only the last method was found to be satisfactory and all subsequent recoveries of attar were made by this method.

Several of the rose species commonly used in Europe for rose oil were grown to be used as a standard of comparison. *Rosa damascena, R. alba, R. gallica,* and *R. centifolia* were tried, but only R. centifolia grew successfully under East Texas conditions. The oil recovered from this species was judged to be entirely satisfactory and similar to European oils. Evaluation and analysis of rose oils as well as oils of other plants reported on later in this discussion were made through the very helpful cooperation of Dr. Ernest S. Guenther of Fritzsche Brothers, Inc. Yield of concrete of *R. centifolia* in the early experiments was low in comparison to European results. The addition of a small pump to circulate the solvent in the extraction apparatus increased the yield to a point where it was comparable to that obtained in Europe.

Eight varieties of the more fragrant Hybrid Tea roses. Aroma, Kaiserin Auguste Viktoria, Talisman, Etoile de Hollande, Briarcliff, Red Radiance, and Condesa de Sastago as well as a field run of mixed varieties were used in these studies. The average absolute oil yield of all hybrid tea varieties was only about 40 per cent of that obtained from *R. centifolia.* Aroma and Kaiserin Auguste Viktoria yielded 44 per cent, and Red Radiance and Condesa de Sastago 32 per cent as much oil as *R. centifolia* on a basis of flower weight.

Dr. Guenther, in commenting on the oils obtained from the different roses, pointed out that in most cases the odor was distinctly different from that of the European product. In many cases the distinctive odor was such as to permit of interesting possibilities in using it commercially for perfumes. However, this value is more apparent than real inasmuch as most such perfume formulas are based on the use of European attar.

Affecting the commercial possibilities would also be the cost of production, particularly the labor cost of harvesting blooms. No effort was made to ascertain what these costs would be. The mere fact that two to three times as many hybrid tea blooms were required to produce the same amount of oil as obtained from *R. centifolia* would indicate that cost of production would he high. One advantage of hybrid tea roses over species roses is that blooms of the former would be byproducts of an established industry. Furthermore, bloom production is more or less continuous on hybrid teas and harvesting could be continued over a long period of time, particularly in the spring and fall.

A year after the start of the rose oil studies, it was decided that it might be well to look into the possibilities of other essential oil plants. Approximately fifteen of the common oil producing plants that seemed to have possibilities were tried with no great degree of success. A number of native and cultivated shrubs were then tried and only Cherry Laurel was found to have possibilities. The oil extracted was of high quality and the yield was good. Finally native weeds were investigated, and, of some eight or ten, three seemed to have possibilities. Steam distillation was the only method of recovery used. Chemical and physical properties of the oils as well as an estimate of their commercial possibilities were ascertained by Dr. Guenther and his staff.

Horsemint (*Monarda fistulosa*) when cut at the proper time, i.e., when in full bloom, yielded 1.0 to 1.11 per cent oil. Odor was strong and rather pleasant indicating a high content of thymol and carvacrol. Specific gravity was high (.947) but the phenol content was normal (68 per cent).

The plant is a perennial and does well on poor dry-natured soils. It is propagated either by divisions or seed. Seeds germinate easily and in an established planting volunteered by the thousands. No record of tonnage was obtained for the first year's growth, but a yield of 5,300 pounds per acre was obtained in the second year. Indications now are that a second cutting can be made in late September.

Mountain Mintweed (*Pycnanthemum albescens*) yielded 1.6 per cent of oil. This oil has a relatively high pulegone content of 91.7 per cent when harvested at the proper time and compares favorably with imported oil of pennyroyal. Specific gravity was .934.

This plant is also a perennial that thrives best on wet-natured soils. Yield the first year was 3,000 pounds per acre of green and 4,700 pounds per acre the second year under the conditions it was grown at the station. Propagation is by divisions.

Goldenrod (*Solidago odora*) yielded a maximum of 2.8 per cent oil when in full flower. If harvested too soon, yield may be as low as 1.3 per cent. The oil seems to be of decided interest to the essential oil trade and indications are that it could be used in quantity.

This plant is a perennial that thrives best in light sandy soils where some moisture is available. It yielded 7,000 pounds per acre the first year and 19,000 pounds per acre the second year. Propagation is best by division since this plant increases rapidly by this method. Seeds germinate readily but are rather delicate necessitating special care and equipment for successful germination.

All of the above essential oil plants are native to East Texas, and could be collected. Unfortunately cost of harvesting would be excessive. To reduce cost of production to a minimum it would be necessary to plant in rows as for any other crops. Rows three to four feet wide would probably be satisfactory. Plants should only be planted in a clean field, particularly one that is free of Bermuda grass. Excessive weed growth would not only reduce the yield, but also the quality of oil. Harvesting by row binder would be ideal. On small acreages mowing and raking in windrows before loading on trucks would be satisfactory.

Further studies are necessary and will be carried out next year.

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Wax fraction	**77.0 Gm.**
Triethanolamine	**3.2 Gm.**
Stearic acid	**9.0 Gm.**
Water	**500.0 cc.**

Pine Bath Oils

A note in the January 15, 1945 issue of the *N.A.R.D. Journal*, in response to an inquiry on the subject, states that according to available literature, the following formulas appear to be representative of the "Pine Bath Oils:"

(1) Sulfonated Castor Oil	**75%**
Pine Oil	**25%**
(2) Diethylene Glycol Mono Ethyl Ether	**90%**
Pine Oil	**10%**
Mix. Allow to settle, or filter until clear.	
(3) Pine Oil	**20.0%**
Mineral Oil	**64.7%**
Oleic Acid	**11.0%**
Triethanolamine	**4.0%**
Color	**0.3%**

Dissolve the pine oil in the mineral oil, add the oleic acid and then mix with the triethanolamine. Definite proportions cannot be given since the amounts of the oleic acid and triethanolamine will vary according to the composition of the oils. Triethanolamine will vary from 3.5 to 4.0%, oleic acid from 8 to 11%. Cloudiness or suspended droplets calls for the addition of more oleic acid.

(4) Pine Oil	**10**
Mineral Oil	**10**
Triethanolamine Stearate	**12**
Water	**100**
Preservative	**q.s.**

Dissolve the stearate in the mineral oil by steam heat. When dissolved, add the pine oil, and when both the oil solution and the water are at 170 degrees F., add the former to the latter with constant stirring. After cooling, strain and bottle. This forms the "Milk" type of pine bath oil.

It is pointed out that this is by no means a comprehensive summary of the pine bath oils. There are many grades and types of pine oils on the market. The pine odor is also obtained by the use of synthetic products, as well as by blending synthetics with the natural oil. Sulfonated oils other than castor, such as olive, are also used as the base for the pine bath oils.

Coloring agents must be used which are soluble in the preparation, soluble in water, harmless, and non-staining.

It is suggested that consideration be given to the use of the para-hydroxybenzoic acid esters when a preservative is indicated, as, for example, in preparations containing water.

Antibiotic Active Against T.B. Organisms

Recently it was reported that culture filtrates of a strain of Aspergillis fumigatus *showed antibiotic activity against* M. tuberculosis. *Carrying the studies further, I. N. Asheshov and F. Strelitz* (Science *101:119, 1945*) *have isolated a crude preparation of the active substance. Bacteriological tests with the crude preparations seem to indicate that: (a) they possess a high degree of activity against staphylococci; preventing their growth in 1:700,000 dilution of the dry crude substance; (b) their bacteriostatic activity against* M. tuberculosis *BCG appears to be higher; preventing growth in at least 1:1,400,000 dilution; and (c) their bactericidal action against the tuberculosis organisms is equal to or slightly lower than their anti-staphylococci activity.*

Animal experiments relative to the toxicity and activity of the new antibiotic are being held in abeyance until preparations of greater purity are obtained.

Eye Drops for Hay Fever

In discussing the general symptomatic treatment of seasonable hay fever and asthma, L. E. Prickman and P. D. Gelbach (Proc. Staff Meet. Mayo Clinic *19:405, 1944*) *remark that eye drops are helpful to the hay fever patient and may be applied in the form of a solution containing:*

Ephedrine hydrochloride	**0.3 cc.**
Sodium borate	**0.3 Gm.**
Boric acid	**0.3 Gm.**
Camphor water	
Rose water, equal parts of each, sufficient to make	**45.00 cc.**

Microcrystalline Waxes in Cosmetics

Citing the work of R. B. Killingsworth, an article in *S.P.C.* (17:572, 1944) points out that the increasing application of petroleum microcrystalline waxes for a variety of industrial uses has attracted considerable attention to these materials in the past few years. One of the fields in which microcrytsalline waxes should find increasing application is the cosmetic industry.

From the manner in which they are produced, microcrystalline waxes may be regarded as hard petrolatums or petrolatums as soft microcrystalline waxes, and it is difficult to differentiate between the two.

The microcrystalline waxes do not include the white paraffin waxes which are definitely crystalline in structure and are obtained from a fraction, known as paraffin distillate, of the crude oil boiling just below the lubricating oil fraction. Paraffin waxes have been available for many years in a number of standard grades and are well known.

Because all petroleum waxes, including both the crystalline and the microcrystalline type, are extremely complicated mixtures if saturated hydrocarbons, relatively little is known about their composition. This is especially true of the latter class because of the greater difficulties encountered in isolating components or types of components with any degree of purity. However, with the increasing accumulation of data on the characteristics of various microcrystalline waxes, a better understanding of their handling and usefulness is developing.

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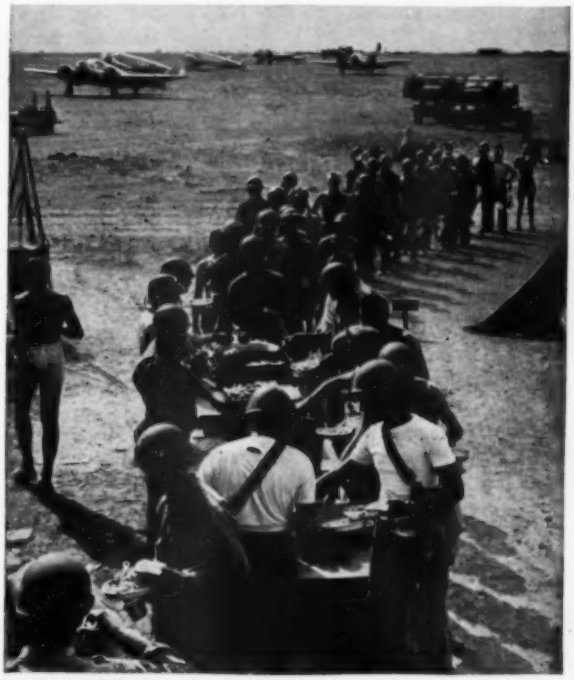

Come and Get It! Because glycerine is wholesome, it is used in foods and food products — in sausage casings, in chewing gum, candies, flavorings, and colorings. Use glycerine!

More Satisfaction! Most cigarette tobaccos are kept from drying out through the use of glycerine. Use time-tested glycerine as the moistening agent in your products—*and be sure!*

More Business for You! If you are using emergency substitutes, you can now get back to safe, time-tested glycerine. And when you plan new products, you'll want to use glycerine, too!

One of the principal differences between the paraffin waxes and the microcrystalline waxes is in their crystalline structure. This is extremely well illustrated by photomicrographs.

The remarkably small size of the crystals of the microcrystalline waxes was probably responsible for the early reference to these waxes as being amorphous. Obviously this was incorrect and the term microcrystalline is more appropriate.

There are other significant differences in properties between the microcrystalline and paraffin waxes that are reflected in their performance in many applications. In general, the microcrystalline waxes have:

1. Higher melting points—140°-190° F.
2. Greater ductility at all temperatures.
3. Greater toughness.
4. Greater tackiness.
5. Greater stability to oxidation at elevated temperatures.
6. Higher viscosities when molten.
7. Greater ability to retain oil without sweating.

Microcrystalline waxes are now available in the U. S. A. in grades varying widely in melting point; also in grades essentially free from taste and odor, and in colors ranging from white to dark amber. The most obvious of their properties is their proven ability to impress their own fine crystalline structure on other crystalline waxes, when they themselves are incorporated with the latter in relatively small percentages.

Beeswax, although differing fundamentally from the microcrystalline waxes in that it contains considerable saponifiable matter, also exhibits this characteristic of repression of crystal size, and is similar in many other characteristics. Therefore, except where saponification is a factor, the microcrystalline waxes can often replace beeswax in wax formulations.

The second important characteristic of microcrystalline waxes for cosmetic use is probably derived from their crystalline structure and their ability to impress their structure on crystalline materials. This is their ability to prevent the sweating of oils from blends of waxes and oils, an important attribute in many cosmetic preparations. A typical photomicrograph strikingly illustrates the decrease in sweating of a blend of stearic acid and castor oil in which increasing percentages of stearic acid have been replaced by a microcrystalline wax.

Sodium Pectate

According to J. Rae (Manuf. Chem. & Manuf. Perfumer *15:363, 1944*) *sodium pectate is marketed as a fine, nearly white powder. Soluble in water, it gives slightly alkaline, colloidal solutions, the viscosity of which depend upon the concentration, pH, and the presence of various salts. Solution is best affected by adding the pectate to boiling water; using mechanical agitation. A 1 per cent solution in distilled water is quite fluid at ordinary temperature, while a 5 per cent solution sets to a solid gel resembling that given by agar-agar. It is heat reversible and liquefies at about 60° C.*

In preparing emulsions, only a small amount of sodium pectate is necessary, but since the proportion will depend to some extent on the percentage of oil and the choice of emulsifying agent, Rae suggests that experiments be performed on small batches. When calcium citrate is used, it should not be more than 20 per cent of the amount of sodium pectate employed. To illustrate the way in which sodium pectate may be used in manufacturing cosmetics, the following two products have been prepared and found satisfactory.

Glycerine Hand Jelly

A. Sodium pectate	**1.0**
Boiling water	**35.0**
Glycerine	**50.0**
Sodium benzoate	**0.1**
B. Calcium citrate	**0.15**
Water	**10.0**
C. Alcohol	**5.0**
Perfume	**sufficient**

Add B to A, stirring continuously add C. This sets to a firm, semi-transparent jelly.

Hair Cream

A. Sodium pectate	**1.25**
Sodium benzoate	**0.1**
Boiling water	**50.0**
B. Calcium citrate	**0.1**
Water	**45.0**
C. Alcohol	**5.0**
Perfume	**sufficient**

This hair cream is nearly solid when cold, but on shaking becomes readily pourable.

From these two formulas it is evident that sodium pectate is very similar in use to sodium alginate, especially in its reaction with calcium citrate

Fumigating Cones

With fumigating cones unobtainable in England, G. F. Shepley (Pharm. J. *154: 39, 1945*) *writes that cones made according to the following formula have proved useful:*

Powdered wood charcoal	**960 grains**
Compound tincture of benzoin	**960 minims**
Powdered tragacanth	**60 grains**
Saturated solution of potassium nitrate, a sufficient quantity	**approx. 2 fl. oz.**

Mix the powders with the tincture and make into a soft mass with the solution of potassium nitrate. Form into small cones, allowing them to dry on a radiator, or in cool oven, guarding against overheating. This quantity is sufficient for about 36 cones. When in use, the cones should be placed in a saucer or tin lid.

Alternatively, large filter-papers may be damped with a 1 in 20 solution of potassium nitrate and compound tincture of benzoin, allowed to dry, and afterwards cut into strips.

Titanium Dioxide in Flash Burn Protectives

In studies on the prevention of flash burns by means of a protective glove film, G. B. Fauley and A. C. Ivy (*U. S. Naval Med. Bull.* 43:209, 1944) employed a miniature cannon, using magnesium powder, to produce a flash. Ointments and glove films were tested at 24 centimeters at which point the temperature of the flash was 1000 to 1500 ° C. It was found that an ointment containing 50 per cent of titanium dioxide and a glove film with 37 per cent titanium dioxide were effective in preventing flash burns.

Venereal Prophylactic

An effective venereal prophylactic described by Blute in the United States Naval Medical Bulletin (*43:1063, 1944*) *consists of:*

Mercury oxycyanide	**0.2**
Sulfathiazole powder	**10.0**
Tragacanth	**10.0**
Water	**225.0**

The amount of water required to obtain a heavy, creamy product may vary somewhat, but the consistency should be such that the resulting mixture can be easily aspirated and injected through a penile syringe. In using this preparation, 5 CC. are injected into the urethra by means of a penile syringe. After the syringe is removed, the mixture is retained for exactly five minutes; more than this will cause a painful urethritis. The mixture is then removed mechanically, by means of a syringeful of liquid petrolatum and by urination. As a further protective measure, additional portions of the prophylactic mixture are rubbed on the skin of the penis, scrotum and thighs.

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Sulfanilamide Advances In Strong Market For All Sulfa Preparations; Penicillin Production Increases

Sulfa preparations and penicillin dominated the fine chemical market developments during the period under review. The call for sulfa drugs has broadened considerably, probably cutting into stocks which were accumulated during 1944. Producers entered the final quarter of the year with about 1,200,000 pounds, including acetyl sulfathiazole, and it is probable that this was cut further at the beginning of 1945. Supplies have declined steadily, in fact, since last May when they totaled 1,650,000 pounds. Military branches as well as civilian outlets have been acquiring larger supplies, but production is probably ample to take care of both, making the panic buying of 1942 unnecessary. The industry is believed to have facilities for the production of around 10,000,000 pounds annually. Last year, as a supply corrective, outputs were held down and for the first 9 months amounted to only 3,000,000 pounds. Sulfathiazole consumption is said to be practically on a par with current production.

A price advance featured the market in sulfanilamide, the first of the sulfas which has been selling somewhat out of line in comparison to other compounds in this group. The new price is $1.05 per pound in 100 pound containers, and $1.25 per pound in 25 pound containers. Production costs, and labor charges chiefly, have mounted materially since sulfanilamide in large quantities was established at 90c and in bottle quantities at $1.35 per pound.

Penicillin production in January ran ahead of estimates somewhat at 230 billion units, of which more than 35 billion units went to civilians through hospital distribution. This latter quantity is probably far below requirements, but on March 15th, WPB removed control of distribution to civilians since production has reached a volume justifying release of penicillin to what will be its normal and permanent outlet. Military branches meanwhile are getting all they require, also a surplus with which to build stocks.

Success of one manufacturer in preparing penicillin in oil suspension for oral consumption opens the possibility of greatly increased uses for the drug as well as wider means of distribution through regular pharmaceutical trade channels.

MARCH PRICE CHANGES

UP

Angostura bark 1c
Arabic sorts ½c
Bergamot oil 50c
Cananga oil Nat. 25c
Celery oil $1.50
Citronella oil Ceylon 10c
Geranium oil Bourbon $3
Lycopodium 25c
Myrrh gum 10c
Papain 50c
Petit Grain Oil SA 25c
Saffron Spanish $1

DOWN

Almond oil Sweet 18c
Chamomile flowers Hung. 2c
Ergot 10c
Gentian root 1c
Grape fruit oil 10c
Henbane leaves 5c
Lemon grass oil 30c
Menthol Nat. $2
Mercury $15
Psyllium seed black 15c
Rosemary oil 15c
Stramonium leaves 1c
Ylang Ylang Bourbon $2

• **Prices quoted in this section were current on the first of this month.**

Vitamins Ample

Restrictions on the purchase, use, and sale of the following vitamins has been revoked: niacin, niacinamide, acid ascorbic, riboflavin, and thiamine hydrochloride. Ample supplies of these products are readily available and prompt shipment can be made. It is also possible now to purchase without restriction 25 pounds of each bismuth chemical during any calendar month. The small order exemption is 2 pounds of each caffeine and theobromine during any calendar month.

Glycerin Supply Ample

Despite reports of a tightening in glycerin it is understood that there is approximately 65,000,000 pounds in the hands of major refiners which is equivalent to at least a four months' supply. In so far as available supplies are concerned the over-all picture is regarded as comfortable.

Refined or C.P. glycerin were not involved in an advance of ⅛ to ½c which took place in the crude grades as the result of rising costs. Saponification glycerin is now 10c a pound and soap lye 9c. It was learned that there are some 10,000,000 pounds of crude in Argentina, but that owing to strained relations with that country importation is not possible. An order for 2,000,000 pounds was not able to clear for the U. S. owing to lengthening wartime red tape, trade and diplomatic barriers. With the Philippines liberated, our former chief source of copra and coconut oil might be reopened and by-product glycerin output increased. Tankers carrying fuel to the Philippines could be utilized for this purpose on their return journey, some believe, even though it calls for difficult cleaning of the tankers.

Menthol Easy

There is a growing belief that Brazilian menthol will continue to decline

(*Continued on page 515*)

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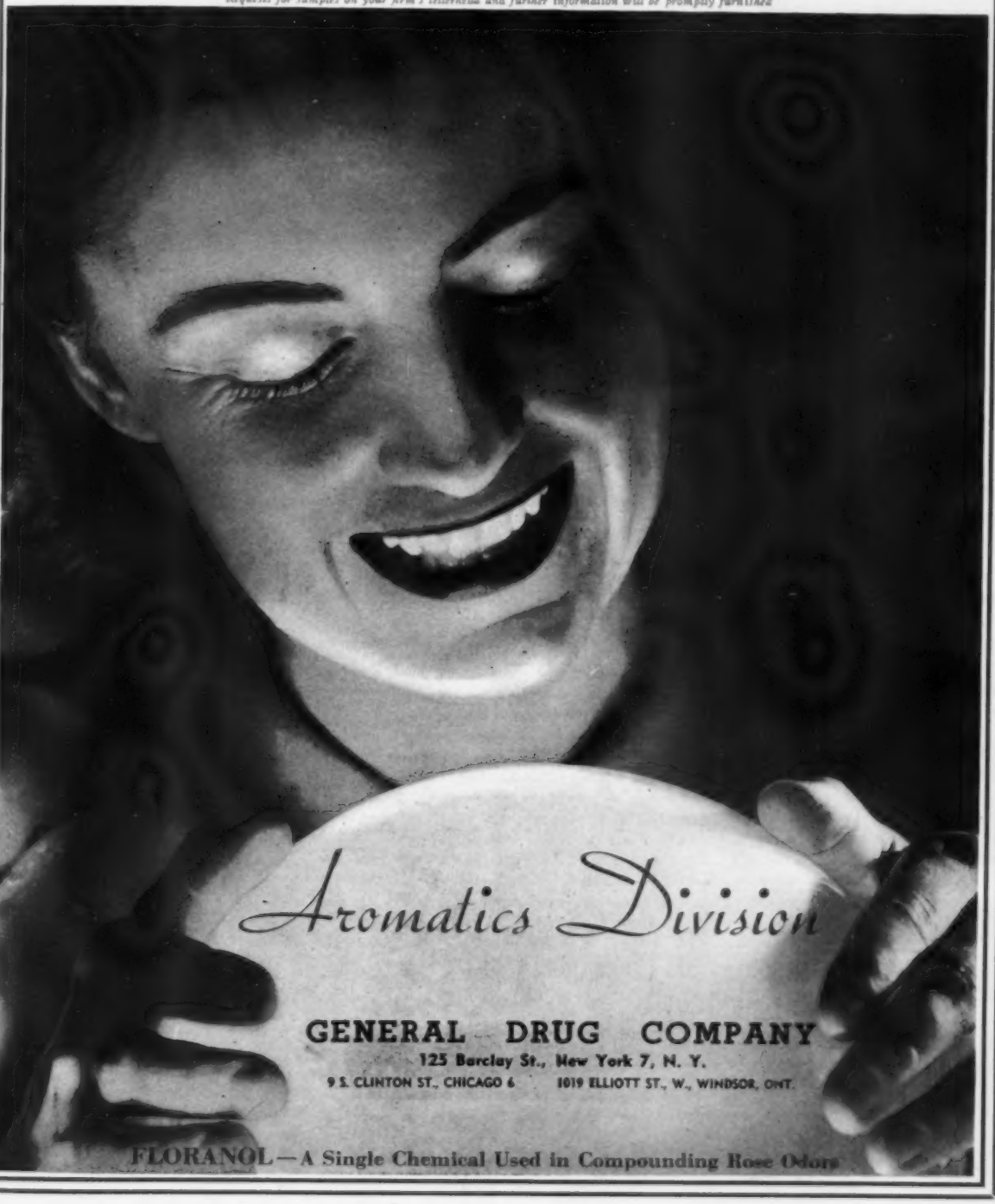
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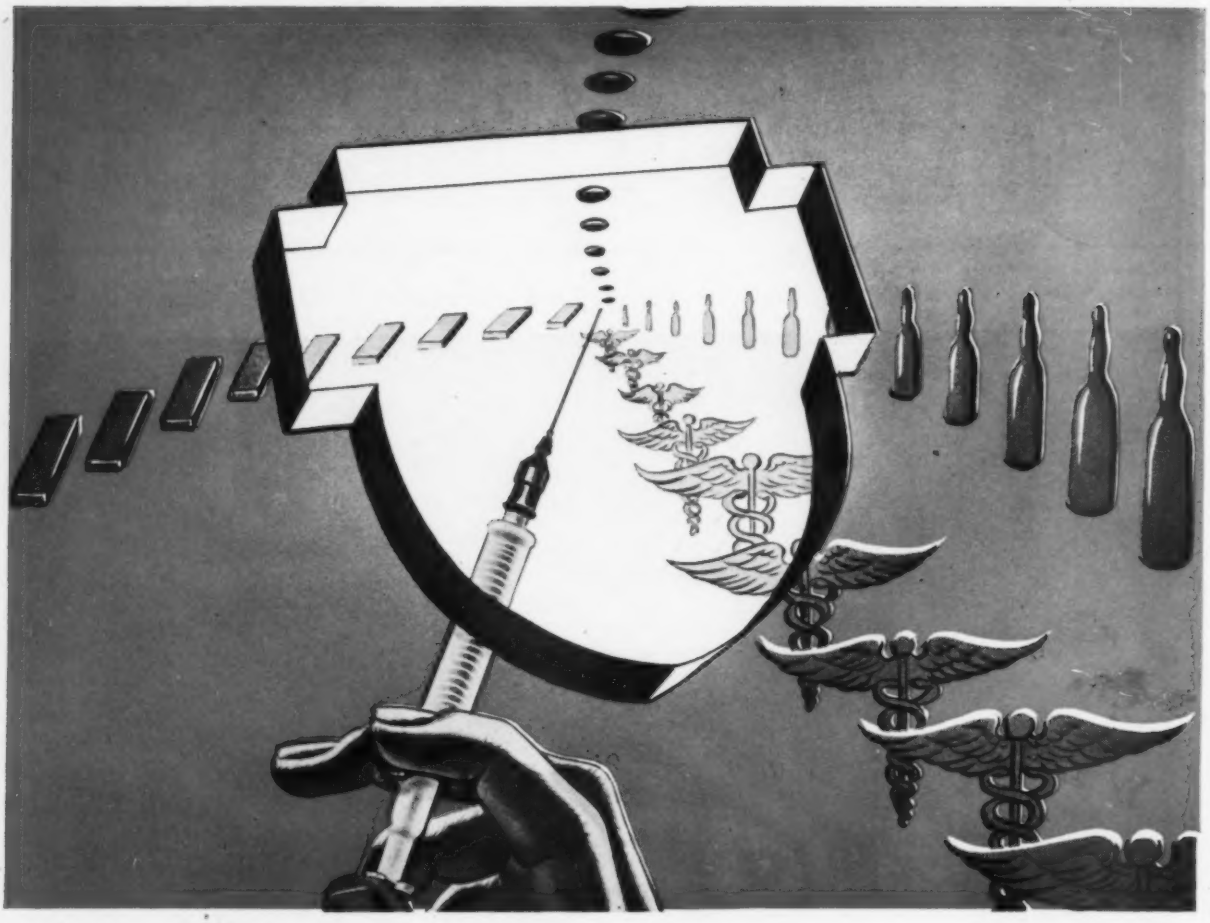

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- Ammonium Sulfate, White, Gran.
- Barium Acetate
- Cadmium Acetate
- Calcium Acetate, Purified
- Calcium Chloride, Anhydrous
- Formic Acid, 98%—100%
- Fuming Sulfuric Acid, Reagent
- Potassium Acetate
- Potassium Cyanate
- Potassium Phosphate, Mono
- Salicylamide
- Sodium Acetate
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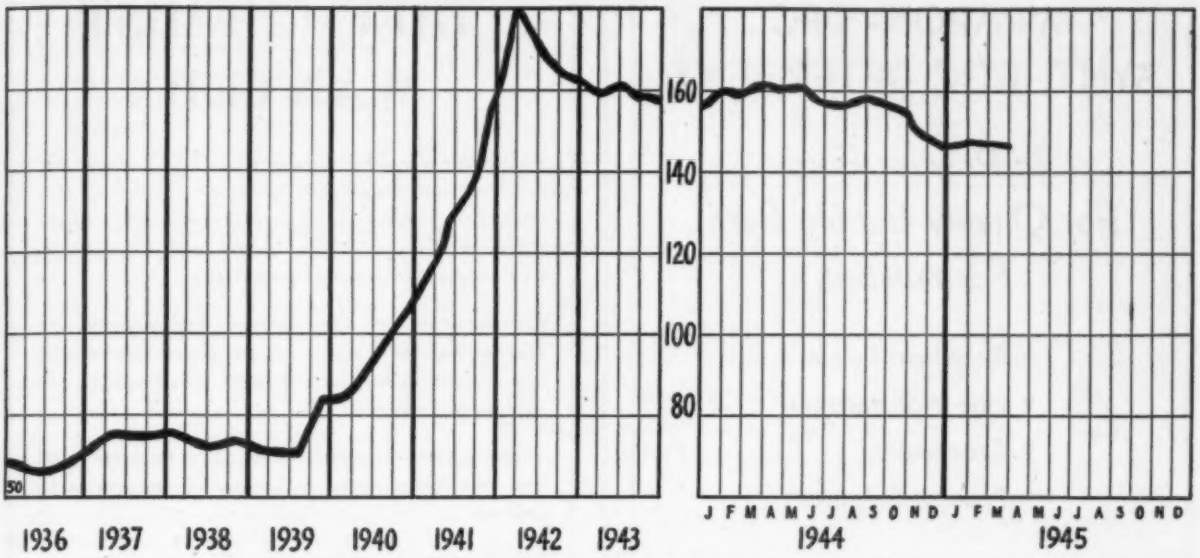
50 Raw Materials—Weighted Price Index. 1926=100.



The price index of fifty commodities for March declined from 145.8 to 145.5.

Bourbon Vanilla Subject To Foreign Control; Confusion In Carnauba Wax Explained

The future of supplies of Bourbon beans is tied in closely with the fact that French colonial policy as made known recently is to control exports much more closely and, possibly, even to end them for the time being in favor of a reentry of French vanilla bean operators in the homeland into the business that supplies Bourbon beans to this market. This is going to make the supply situation in the future extremely dubious and subject to all sorts of influences save those which would assure a steady movement of beans to this country at fair prices.

A member of the French Supply Council is reported on his way to Paris to participate in discussions which are expected to result in a definite plan regarding exports out of Madagascar and Reunion. At the moment, however, the outlook regarding early shipment of vanilla from Madagascar is not promising. Exports are subject to licenses, and as far as can be learned, no licenses have been granted on the upper grades of beans. In some quarters it is said that export licenses have been granted covering some of the lower grades. Should this prove correct there remains the question of obtaining steamer space.

There was a recent arrival here of about 60 tons. Most of these beans have gone directly into consumption, however, and there appears to be little left in the hands of dealers for stockpile purposes.

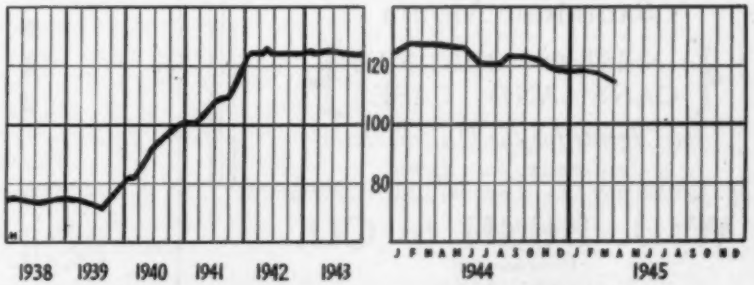
The uncertainty regarding replacements of vanilla from Madagascar is regarded as particularly serious since shipping prices on Mexican beans have been steadily advancing to a point where local houses, because of ceiling prices, are unable to obtain replacements in Mexico. The extended advance in bean prices in Mexico has been attributed to a much smaller crop this year.

Carnauba Wax Confusion

The State Department as the result of a request by the Office of Price Administration has endeavored to spike all rumors and reports alleged to have been circulated in Brazil to the effect the Office of Price Administration was planning to increase maximum prices importers could pay for carnauba wax in Brazil. The denial regarding any anticipated increase in carnauba wax ceilings was contained in a cable from the State Department to the American Embassy at Rio de Janeiro which stated in part: "OPA requests that the following information be brought to the attention of exporters of carnauba wax: Recent rumors of OPA's plans to permit United States importers to pay higher prices for carnauba wax are completely unfounded. This office does not contemplate any revision of the wax price structure."

For the past several weeks or more local houses have been without offers of carnauba wax from Brazil and it was believed here that rumors circulated in the primary center concerning a possible increase in prices was the

15 Medicinal Chemicals—Weighted Price Index. 1926=100.



The medicinal chemicals index declined from 123.1 to 119.6. Menthol dropped sharply to $10.75 a pound.

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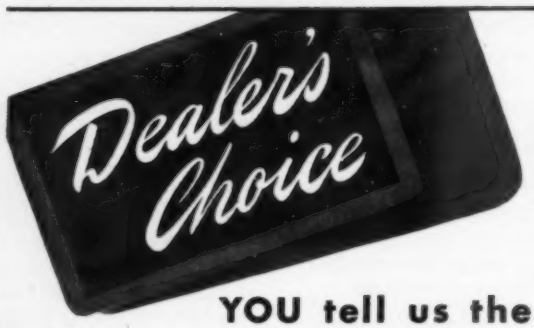

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reason why exporters failed to offer goods.

As the result of the State Department's cable which clarifies the position it is generally believed there will be a gradual resumption of offerings from the primary center. Current maximum selling prices on spot follow: 83¼c a pound for #1; 81¼c a pound for #2, and 73½c a pound for #3. These prices are well above those prevailing in the prewar period.

The Carnauba palm grows in vast areas in the dry regions of northern Brazil, particularly in the States of Ceara and Piaui. These areas, usually longer than they are wide, produce clean, non-vegetative woods, often covering one hundred square kilometers. The tree thrives mainly on claylike, humid, well-cultivated fields along river banks and in valleys of the hinterlands. It is never found in the highlands. The entire productive zone is about 1,413,155 square miles.

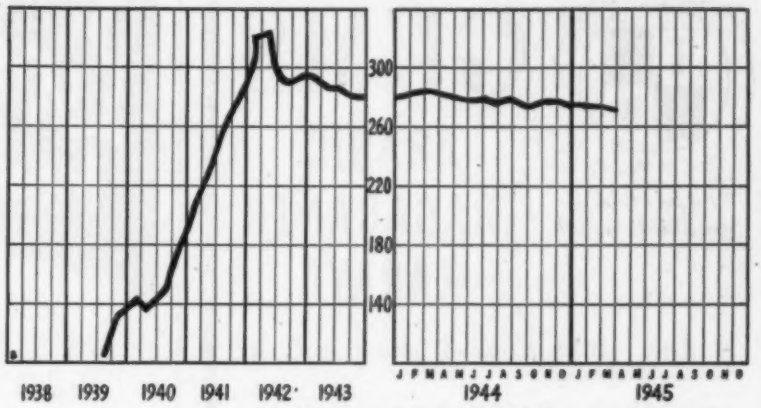
The State of Ceara alone has about 32,000,000 trees under cultivation on more than 15,000 plantations in 50 municipalities. Based on an annual average of 130 grams of wax produced per tree, there are an estimated total of 80,000,000 Carnauba trees in Brazil.

The United States is the major importer of Brazilian carnauba wax. In 1939 Brazil exported 7,385 tons of this product to the United States, valued at 91,027,000 cruzeiros. In 1940 the United States imported 7,569 tons with a value of 149,778,000 cruzeiros.

Miscellaneous

The outlook in ergot is not regarded as very promising in view of the substantial quantities handing over the market. Spot prices have dropped to a range of from $1.20 to $1.25 a pound. While shipping prices on balsam copaiba remain above importers' ceilings, there appears little hope of any early replacements reaching this market. A strong tone continues to feature gum karaya. A fair supply of Hungarian type chamomile flowers is available on spot. The market price has softened with quotations as low as 40c a pound being noted. New and higher prices on golden seal root are entirely nominal with export inquiries failing to uncover any spot holdings. Powdered papain and kamala are higher. Dandelion root is scarce on spot. A tight situation has developed in capsicum. A fair sized quantity of juniper berries is offered on spot at prices ranging from 63c to 65c a pound.

15 Botanicals—Weighted Price Index. 1926=100.



The botanicals index declined from 275.3 to 274.7. Ergot was lower at $1.20, and gentian dropped to 40 cents.

FINE CHEMICALS

(*Continued from page 512*)

in keeping with the increasing selling pressure at the primary center.

If production in Brazil proves to be nearly three times as much as it was last year, and if America remains about the only major consumer, factors point out that there is a strong possibility of the article declining to $7 or better. At $5 a pound it would still be above the $3 to $3.50 level at which menthol imported from the Far East sold prior to the outbreak of the war, it is explained. There appears to be little question that the abnormally high levels which American consumers paid for menthol in Brazil served to act as an incentive to mint growers to expand their acreage in Brazil. Such an expansion in output will, it is believed, be reflected in a further decline in menthol prices unless some artificial measures for stabilizing the market are put through. The spot market continued easy at from $10.75 to $12.00 a pound.

Mercury Easy

The mercury market continues to be influenced by more liberal offerings of Spanish metal for shipment. It is reported that $152 per flask is now being quoted on Spanish metal for April shipment. With more favorable metal costs there is some talk of an early reduction in mercurial prices, but some manufacturers point out that production, especially of the oxides, is entirely sold on contract up to the end of June. Spot metal was lower at $160 per flask.

Shark Liver Oil From Venezuela

A small shark liver processing plant in Venezuela has been producing about 25 tons of oil annually for domestic consumption. It is expected that this quantity will be increased in the near future, making some available for export. Shark fishing in the Gulf of Venezuela is reported to be especially promising.

Alcohol Estimates

A slight downward adjustment in estimates of the supplies of industrial alcohol and the requirements thereof for 1945, compared with January estimates, has been made. The revised estimates sets requirements in 1945 at 649,000,000 of 190 proof alcohol, which compares with the January estimate of 655,000,000 gallons. The 1 percent decrease was effected by cutting back estimated direct military and lend-lease needs from 105,000,000 gallons to 95,000,000 gallons, while increasing estimated synthetic rubber needs to 353,000,000 gallons from the January figure of 349,000,000 gallons. Government stocks late in February were reported to be 69,000,000 gallons and the residual government stock at the end of 1945 is expected to be approximately 28,000,000 gallons.

Miscellaneous

Considerable inquiry continues to be noted for tartaric acid. Prices on imported material are firm at 78c duty paid. All the chemical solvents, namely acetone, butyl alcohol, butyl acetate and methyl acetate are scarce and firm. Current prices on some of the iodides are subject to shading and the bromides

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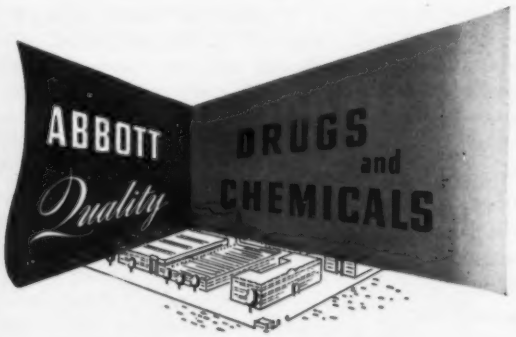

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are rather unsettled by the presence of good stocks and a narrow demand. Saccharin, coumarin and vanillin are all scarce and firm. Prices on methyl salicylate remain unchanged, but there has been a decidedly better inquiry for the article over the past week. The spot position in medicinal cod liver oil has strengthened. Although it is late in the consuming season several sizable export inquiries have been received here. Local houses explain that comparatively few offers are coming through from Iceland. Developments in crude iodine are being followed with considerable interest in the light of the sizable quantity recently offered by the Government. A sizable quantity of ergot is likewise hanging over the market. The drug which has for many years been used in childbirth had been purchased by the Government in connection with a recent discovery where it was found suitable for treating troops suffering from shock.

A price of $4.30 per gallon. cost and freight, was fixed by the Office of Price Administration as the maximum price United States importers can pay for olive oil. This price applies to shipments arriving at the first United States point or port of arrival, OPA announced.

The action became effective March 24, 1945, and applies to all grades of olive oil imported into the United States, but the price does not include war risk or marine insurance or United States duties, OPA said.

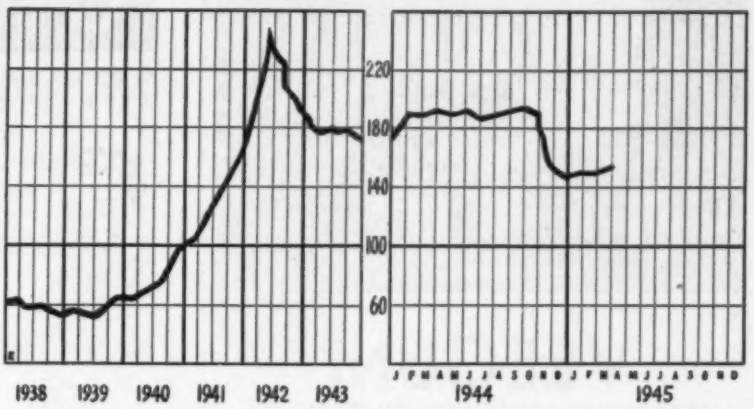
ESSENTIAL OILS

There are many inquiries for aromatic chemicals and essential oils, but business is becoming more and more difficult by reason of shortages, low price ceilings, and the inability of importers to obtain replacements of certain imported articles.

The outlook regarding replacements of French floral oils continues clouded, but it is believed some news will come out of the San Francisco conference that should tend to clarify the picture.

As far as can be learned, there is an urgent demand in France for all those oils and other allied products produced in Madagascar and the Reunion that go into the manufacture of perfumes and toiletries. Until this demand is satisfied it is not likely that any of these articles will come to this market. There also remains the question of exchange and a possible change in the policy of marketing these products. Some trade factors feel that future purchases of products produced in Madagascar and the Reunion will have to be made through France.

15 Essential Oils—Weighted Price Index. 1926=100.



The essential oils index advanced from 149.2 to 151.8. Bergamot rose to $8.50; cananga was up to $12.75, and Citronella Ceylon rose to $1.05.

Benzaldehyde Tight

There appears to be little hope of any relaxation in the tight position in benzaldehyde, especially in view of recent rumors about the trade to the effect that the Government is about to enter the market for more than 1,000,000 pounds of benzyl benzoate for use as an insecticide. Such an order, it is believed, would not only absorb all available lots in the market, but it would also require some time to manufacture the balance, it is explained.

Rosewood Oil Brings Top Prices

Rosewood oil has been produced in the States of Amazonas and Para for a long time; however, the local production has only recently interested the foreign trade, and exports have contributed to the expansion of rosewood oil distillation, mainly in the State of Amazonas. During the period 1938–42 the production of rosewood oil was: 1938—109 tons; 1939—166 tons; 1940—220 tons; 1941—324 tons; and 1942—267 tons. The local market price for Belem was raised from about $34.30 per metric ton in 1938 to $147 per metric ton in 1942. Although production in 1941 was larger than in 1942, the market price was only $75.30 per metric ton.

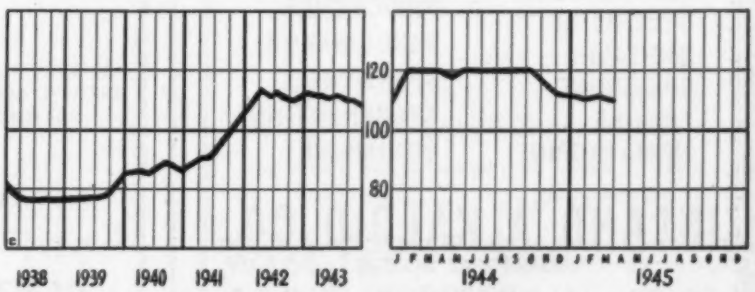
British Guiana Lime Oil Exports

Exports of lime oil from British Guiana in 1944 were estimated at 506 imperial gallons, valued at approximately $37,909 in comparison with exports in 1943 of 350 imperial gallons, valued at $25,570.

Orange Oil Firm

Spot prices on California orange oil are firm, with the Exchange brand being maintained at $2 per pound for cold pressed, and $1.25 for distilled oil. The outlook regarding 1945 production of Brazilian orange oil is not regarded as very promising since reports from the primary center indicate that Great Britain is paying fancy prices for the fruit and that there will be little material available for pressing.

25 Cosmetic Raw Materials—Unweighted Price Index. 1926=100.



The cosmetic raw materials index declined fractionally from 115.8 to 115.0. This was caused by the lower price for menthol.

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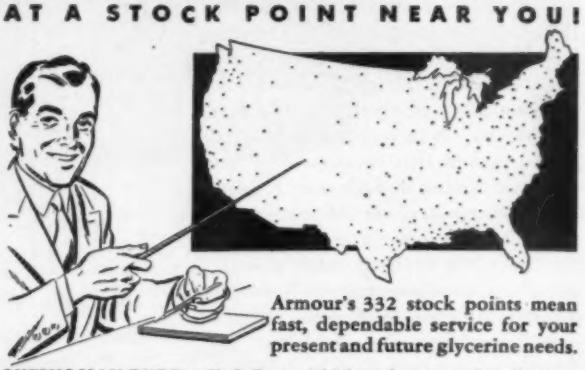

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Polyvinyl Alcohol

(Continued from page 445)

of polyvinyl alcohol is heated with benzopurpurin to yield a product that may be used for stiffening tissues, for supporting the mediastinum or for filling cavities.

When treated with iodine, polyvinyl alcohol yields a blue-violet compound which is active against lungworm in cattle.[24] PVA may also be useful as a sticking and spreading agent in insecticidal sprays; serving to prolong the effective life of the toxic ingredients.[6] Thus the use of polyvinyl alcohol is said to increase materially the effective toxic period of nicotine on foliage.[2]

Of current interest is the suggestion by Middendorf[24] that PVA will make a good agar substitute after the addition of Congo red. More recently, other workers,[28] in considering agar sparing and agar substitutes in the preparation of bacterial culture media, have recommended the thickening properties of polyvinyl alcohol as a means of preparing a solid medium. Rather novel, but of interest to research workers, is Moment's[29] suggestion that PVA solutions be used for quieting paramecium and other small organisms, like mosquito larvae, during prolonged microscopic observation.

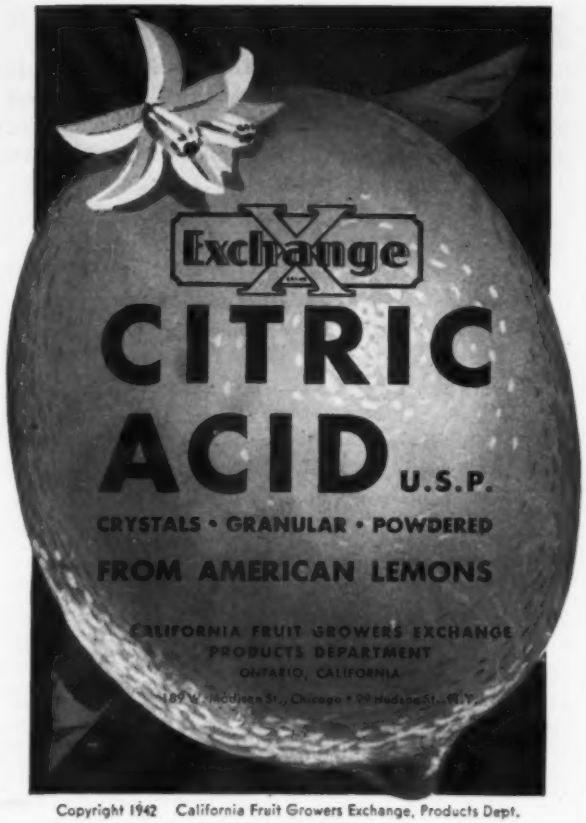
Because of its emulsifying, film-forming and thickening properties, plus its freedom from injurious effects on the skin, polyvinyl alcohol offers many attractive possibilities to the cosmetic manufacturer. Although it does not appear that much work has been done along these lines, it has been indicated that PVA may be useful in the formulation of such varied products as facial masks, brushless shave creams, cleansing creams, leg make-up, wave sets, beard-setting preparations for use with electric razors, and various other cosmetic products.[2,6]

Jones[6] points out that if a simple aqueous solution of polyvinyl alcohol is well rubbed in the hands for a few seconds, it starts to peel off, carrying all the dirt and grease with it. Before the war, says he, collapsible tubes of polyvinyl alcohol were sold in Germany for this purpose and they proved very popular with motorists and mechanics.

According to De Navarre,[30] PVA has possibilities in the formulation of liquid lipsticks. A particular advantage of this material, he notes, is its ability to dissolve in water and become plasticized by it. Glycerine and similar materials may be employed as plasticizers. As a rule, 1 to 5 per cent solutions are satisfactory carriers, as indicated in the following formula:

Polyvinyl alcohol, Type "A," medium viscosity	4 parts
Glycerine	2 "
Dye	1 part
Alcohol	10 parts
Water	83 "
Perfume	sufficient

It is remarked that such products may be the subject of pending patents and that this fact should be kept in mind by those considering the preparation of such liquid lipsticks. PVA films may be made water-



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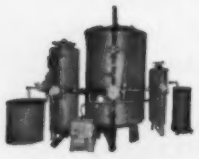

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insoluble, according to this writer, by treatment with dibasic acids like adipic, citric or tartaric acids.

Polyvinyl alcohol has interesting possibilities in both the drug and cosmetic industry. Those who explore further into the application of its unusual combination of properties will undoubtedly find the search quite worth while.

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Penicillin

(*Continued from page 435*)

in many diseases, and in others there is danger from inadequate dosage. For example, it is not hard to visualize that a patient with a chancre would hear that penicillin cures syphilis, would get hold of some, take it (or have it administered) in inadequate dosage, see his chancre disappear, feel that he has been cured of the disease, and then develop cerabrospinal or cardiovascular syphilis many years hence. Numerous examples can be imagined, and some have probably already occurred."

However, Lt. Falk, who admits that he is "no longer intimately associated with work on penicillin," goes on to say:

"There are quite clearly dangers from the failure to use penicillin in diseases which it alone will cure. There are also dangers of too stringent controls on its use. These are not discussed here, since the opposite factors appear to need more emphasis now."

Another factor that has been stressed in some directions is that of the development of a resistance to the action of the drug if the drug is given in insufficient dosage. The *Journal of the American Medical Association*, August 12, 1944, published a report to the effect that when insufficient dosage of penicillin was used in cases of streptococcus infections, the strepticoccus bacteria developed a resistance to the effect of penicillin and therefore penicillin was not efficacious. This type of thing might be responsible for the development of cases which are described as "drug-fast." It seems that

a drug-fast case is one in which an individual has once been treated with a drug effectively, but in this one instance has developed a resistance or sensitivity so that the next time the drug is applied to this patient it is ineffective. Many such cases have been reported in the use of the sulfonamides and this is one of the reasons why sulfonamides should not be used indiscriminately. There are reports that a larger number of cases have been found in the Navy with the use of penicillin than in cases of sulfonamides.

A more recent report in the *Journal of the American Medical Association* of February 22, says:

"Tests on various strains of staphylococcus aureus and meningococci by a method for assay of penicillin in body fluids, such as blood, have shown a considerable variation in penicillin sensitivity of the various strains. This may explain why the new drug is more effective in treating some patients than in others with the same infection.

"In the tests for penicillin sensitivity of staphylcoccus aureus, 30 strains were used, 2 of them shock strains and 28 isolated from various human sources. There was a definite variation in the sensitivity of the various strains. 'The fact that some strains of staphylcoccus aureus are inhibited only by a concentration of penicillin five to ten times as great as required for other strains may be related to the lack of penicillin therapy in certain infections by the more resistant strains, says Dr. Cooke' striking differences also were found in the sensitivity of seven strains of meningococci grown from the spinal fluids of infants and children with acute meningitis."

There are three types of penicillin,—the sodium salt, the calcium salt, and penicillin-X, the latter being the product made by surface fermentation, and the other two being the salts of the product made by deep fermentation. With respect to the first two, the choice revolves around the desire for solubility or stability. The sodium salt is more soluble, and the calcium salt is said to be more stable. The surface fermentation product is believed by some to differ in its action from the deep fermentation product and there are reports that the surface fermentation product works better in venereal diseases. However, the surface fermentation product is too difficult to make in large quantities or at a reasonable cost worthy of any great consideration. This is the product that was made when penicillin manufacture was first undertaken. It is made in a very large number of bottles and requires an enormous amount of hand labor for its production. Probably increased dosage of the deep fermentation product will solve the problem. There remains a great deal of work to be done before all these questions are answered.

Thus it appears that penicillin is reaching its limitations in some directions, but that new uses, not yet developed are bound to be revealed as the product becomes more widely used. Just as the National Research Council report that penicillin was of no use in bacterial endocarditis was published the day after Dr. Leo Loewe of Brooklyn Jewish Hospital accomplished his

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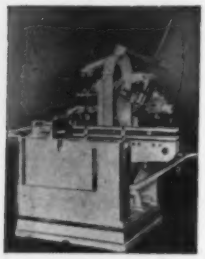

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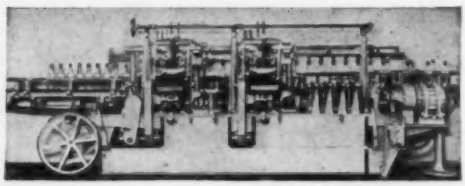

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first cure of that disease with penicillin, so methods of treating other diseases that are now supposed to be resistant to penicillin might be uncovered. While the drug is really not new any more, its production and distribution has been so restricted until now that a fair chance to discover all of its possibilities has not been had. A list of the diseases in which it is effective, those in which its place has not been definitely established, those for which it is contra-indicated, and the dosages and methods of application was issued by the WPB in December. But within three months this list was outmoded and a new one was said to be in preparation.

The drug manufacturing industry has become a particularly fast moving one under the stimulus of war, and things are moving so rapidly with respect to penicillin that reports should really be on a day-to-day basis.

Statistical Picture in Cosmetics

(Continued from page 437)

necessarily raise the sales volume unless the supply answers a growing demand or new needs because of new uses. Growing employment of women and many men not accustomed to manual labor and, therefore, feeling the need for cosmetic aids, the general rise in living and entertaining values, higher income leading to the purchase of more costly cosmetics may properly be classified as war developments. Accelerated by the war, but ante-dating it in origin, were the general broadening of the field cosmetic attention as exampled by leg and foot make-up, the arrival of the teen age customer, more detail in the application of cosmetics, the growing discrimination in the selection of individual preparations, and other more permanent developments.

The real significance of the current statistical picture of the cosmetic market and its implications for the prospects of the cosmetic industry is the exceptional stability of the figures entering into the structure of the statistical curves, and the manner in which cosmetic sales have responded to the all over stimulus of the war, as it has affected their share of the total of civilian consumer expenditures during the war years.

The peculiar ability of the cosmetic demand to resist the effect of a declining economic curve has always been its most outstanding characteristic. Surely toilet goods sales dropped to their pre-war low during 1933 when total consumption expenditures declined to $46,000,000,000, but their proportional position in the consumers' total budget was actually higher than during the then best year of all, 1929, when total consumer expenditures were $78,000,000,000.

The first years of the war made no change in this condition. As total consumers expenditures rose from $61,000,000,000 in 1939 to $74,000,000,000 in 1941, so rose toilet goods and cosmetic sales from $356 to $431 millions. The proportional rate of toilet goods consumption to all consumer expenditures remained practically the same; 0.57 per cent in 1939, 0.57 per cent in 1940 and 0.58 per cent in 1941.

An important change, though, has taken place with the arrival of 1942, the first year after Pearl Harbor. Total consumer expenditures continued their climb; $82,000,000,000 in 1942, $91,000,000,000 in 1943 and $96,000,000,000 in 1944.

However, toilet goods now participated in this to the extent of 0.62 per cent in 1942, 0.68 per cent in 1943 and 0.74 per cent in 1944. Comparing the three year averages of the pre-Pearl Harbor period (0.57 per cent) with that of the post Pearl Harbor years (0.68 per cent) consumers are spending 0.11 per cent more of their annual total personal expenditures on toilet goods than they have done at any time in the past, excepting the unusual year of 1933.

In other words, that sudden rise of the annual sales volume of toilet goods and per capita consumption that put into appearance with the start of 1941 does not merely reflect the general increase of consumers' income and expenditures but results from a definite readjustment of the consumer's attitude to the purchase of cosmetics.

There are two ways in which the cosmetic industry may want to look at these figures.

First, they place a novel complexion upon the post-war expectations of the cosmetic markets, the implication of which can hardly be lost on the retail trades when properly explained.

Plans for the post-war era must be revised when it is only too evident that sales volume will not be stationary or grow only at a slow rate, as had been assumed by retailers heretofore, but may actually rise at renewed speed with the return of normal buying and supply levels.

Assuming that total national income during the post-war period will reach the estimate of $142,000,000,000, made by Department of Commerce experts, which is not so impossible considering that it equalled this figure in 1943 and reached $155,000,000,000 in 1944, this will mean an approximate annual total civilian consumer expenditure of approximately $119,000,000,000. The cosmetic industry's share in this should not be 0.57 per cent, the basis of most previous calculations, but at least 0.68 per cent; or total annual sales of cosmetics and toilet goods amounting to $809,200,000,000. This is about 14 per cent increase over 1944 which, incidentally, approximates the per cent increase from 1943 to 1944.

Moreover, this figure represents a minimum rise rather than a maximum expectation, because it does not consider the preceding steady growth of the "per cent to total" through the years from 1941 onward to 1944. Nor does it make allowance for the corresponding increase in the per-capita consumption of cosmetics.

Second: If cosmetic sales have been able to expand through the difficult years of the war in volume, dollar values, per capita consumption and in the budgets of Mr. and Mrs. Average American there is absolutely no reason why they should not continue upon their upward course in the future, independently whether war conditions will prevail for another period of months or

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reconversion gets on the way. Percentages, while having their uses, give only an imperfect picture of the size of the new business that has accrued to the cosmetic industry during the last few years. Actually manufacturers added to their sales: $86,000,000 in 1942, $103,000,000 in 1943 and $89,000,000 in 1944. The calculated post-war increase over 1944 should approximate $99,000,000, and it is quite possible that the industry may not have to wait for the end of the war to reach this figure.

These $99,000,000 are "natural" growth. They will result from a normal development of existing economic factors and they supply evidence that there is plenty of growing energy left in the cosmetic market for any manufacturer who cares to turn it into added volume for himself.

This is something to think about at a time when many manufacturers and retailers have actually considered whether they should not pull in their horns and wait for "better times."

Statistically, most certainly, the evidence is all in favor of the man who plans for a rise and applies himself to the business, how he can get his share of the one hundred million dollar mellon that will be ready for distribution in a not so far distance.

Clarification of Liquids

(*Continued from page 439*)

effort to make a product "good" many cases are on record where the chemist seeks to use more than enough of the active ingredients. Changes in temperature, it is well known, increase or decrease solvent action. For this reason it is quite the general custom to attain proper clarification by filtering at reduced temperatures. This procedure as well as reducing the solute or when two or more solvents are used to change the proportions of these solvents usually overcomes difficulties in this regard. Evaporation of solvent during processing must also be guarded against.

The formation of sediment through the action of microorganisms is probably more common than is generally suspected. Not only fermentation or mold formation, but other changes not readily discernible occur. Bacteria and fungi will grow anywhere that favorable media or conditions for growth are found. Many solutions afford such an atmosphere. The use of preservatives having bacteriostatic, germicidal or fungicidal properties is the most common method of combatting this condition. Such preservatives include the benzoates, salicylates, alcohol, sugar, phenol, cresol and numerous other chemicals. In cases where preservatives cannot be employed to overcome the trouble, it is necessary to so change the composition of the preparation that microorganisms cannot multiply.

While slow chemical change might be included under incompatibilities, it may be pointed out that this often troublesome condition causing cloudy and unsightly liquids is often due to action caused by exterior conditions. Of these, slow oxidation due to the oxygen in the

air in the presence of light is the most common. Other conditions like inclusion of very small quantities of other gases and moisture may be the cause of the slow sedimentation. A case in point comes to mind regarding a preparation which remained crystal clear for a time after a double filtration but six months later formed an unsightly, black, flocculent sediment that seriously affected the sale. After many investigations it was found that this product was being affected by minute quantities of a sulfur gas that escaped from the nearby boiler room, especially as the fires were banked for the night. By changing the location of the open top, mixing and settling tanks the difficulty was entirely remedied. In another case an oral preparation formed a brown flocculent sediment in about sixty days. Large tanks to hold a thirty day supply of the product were installed and yet the difficulty persisted. The difficulty was finally corrected by the simple procedure of slowly bubbling air through the solutions for five days before filtering. In still other cases it is necessary to store liquid preparations for a month or longer before filtering to clarify them. Aging in this regard is also employed to improve the quality of the product especially in alcoholic solutions, which improve in odor or taste through the formation of minute quantities of aldehydes, ketones and other chemicals as is the case with wines and liquors. During this aging, a sediment forms which is not easily filtered out. Well aged preparations then should be carefully investigated as aging alone will not always result in proper clarification.

Since clarification is an important process to making a quality product, it requires most careful attention in even the simplest of solutions. Samples which are dated should be stored to simulate extreme climatic conditions and frequently examined. Accelerated conditions may be resorted to in extreme cases only, as the formation of sediment and cloud is often very mysterious. It must be borne in mind that the consuming public prefer crystal clear preparations and do not understand the problems behind the defects. They usually associate sediments with filth, impurities and carelessness, even though this sort of criticism is unfair and untrue.

Unreasonable F.T.C. Powers

(Continued from page 440)

However, Dr. Durrett left Squibb after a rather short time, returned to the FDA, and just about three years ago turned up in the Federal Trade Commission in his present position. It seemed to be only a matter of time before he would make himself felt by the industry in his new position, and that he did. It is doubtful if the matter of dual control of the products of this industry would have come so much and so quickly to the fore if Dr. Durrett had not held his present position with the FTC.

But when you take Dr. Durrett, you take him as he is, and you take what he stands for along with him. The FDA found that out, and the FTC has also found it out. Largely because of Dr. Durrett's association with

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the FTC, the Commission finds itself in a fight to retain its powers for enforcement of its orders,—a power which it has held unchallenged since the Commission was created by the Federal Trade Commission Act of 1914. However, the Commission has not yet lost these powers and one can expect that Dr. Durrett will fight his darndest to see that these powers are not lost to the Commission. Therefore, it is up to everyone in this industry especially, and everyone in every other industry to see that the Commission does lose these unreasonable powers.

New Drug Regulations

(Continued from page 441)

It is therefore apparent that many products which have been advertised directly to the medical profession will necessarily lose their exemption with respect to the informative labeling provisions. Since they have to be labeled in detail, the condition or conditions for which their use is recommended will have to appear in the label or labeling. Particularly, in the case of drug preparations which have been in the market for many years, their representations will definitely have to be re-evaluated, in the light of present pharmacologic and therapeutic knowledge.

With this increased activity on the part of the Food & Drug Administration by virtue of the revised regulations in re-examining the representations made on behalf of the so-called "ethical" specialties, it is entirely probable, that the nationally distributed consumer-advertised proprietary drug preparations will also feel the scrutiny of the Food & Drug Administration. It would therefore be highly advisable to re-evaluate one's products from these viewpoints, in the light of the impending effectiveness of the promulgated regulations.

NAIL POLISH: We are interested in a finger nail polish formula. If you can furnish us with two or three good formulas it certainly will be appreciated. Cincinnati.

The preparation of a good modern nail polish is more or less the job of a specialist. It involves blending of ingredients to give balanced glossing, plasticizing, spreading and solvent action. It is my opinion that it is more advisable to contact manufacturers of finished lacquer or polish rather than to undertake its manufacture by yourself. The following formula is suggested for *experimental* purposes only:

Nitro cellulose (½ Second Vis.)	10.0
Ethyl acetate	50.0
Butyl acetate	20.0
Diethyl phthalate	15.0
Camphor	4.5
Color (Dye)	0.5

Dissolve the nitro cellulose and the camphor in the ethyl acetate. Add the rest of the ingredients. Perfume and color as desired.

READERS' QUESTIONS

CAKE MASCARA: Have you available any formulas for the manufacture of a cake mascara that will not cause smarting when it accidentally gets in the eyes? Rio de Janeiro.

The following formulas are modifications of the usual type of cake mascara and being free of strong alkalies will not smart as did old fashioned preparations based on the use of soap.

Triethanolamine stearate	**40**
Paraffin	**30**
Beeswax	**12**
Lanolin	**5**
Lampblack	**13**

or—

Glyceryl monostearate	**60**
Paraffin	**15**
Carnauba wax	**7**
Lanolin	**8**
Lampblack	**10**

Melt, mix, and mill the ingredients, then cast or extrude to the proper form. In making mascaras in other colors than black, take extreme care to select only completely inert colors to avoid possible injury to the eyes.

SHAMPOO CREAM: We are interested in securing a formula for producing a shampoo in a cream form, one that is fairly concentrated. Would it be possible to use one of the synthetic detergents in such a preparation? San Diego.

I am not familiar with the formulation of a shampoo cream containing a synthetic detergent. However, I would suggest that you try mixing one of the newer synthetic detergents with a gum jelly base or a bentonite jel base. Plain lathering type shaving cream makes a really excellent shampoo and has frequently been recommended for this purpose. As a matter of fact, one of the large manufacturers of shaving creams is advertising his product for this purpose. A good grade of shaving cream should provide high lathering powers, good cleansing action, and practically no irritation. The following is a typical formula to experiment with:

Stearic acid, triple pressed	**28.0**
Cetyl alcohol	**2.0**
Cocoanut oil	**11.0**
Potassium hydroxide	**6.62**
Sodium hydroxide	**0.2**
Glycerin	**6.0**
Perfume	**0.5**
Water	**45.68**

Melt one-half of the stearic acid and cocoanut oil in one kettle. In another kettle melt the remainder of the stearic acid and the cetyl alcohol. In a third kettle heat the water; dissolve the alkalis in it, and add the glycerin. Strain the melted stearic acid and cocoanut oil into a steam jacketed mixer. Start the agitator and run in the alkali solution. Mix for a half hour with the heat on and then add the stearic acid-cetyl alcohol mixture very slowly. Continue the mixing until the soap is smooth; add the perfume and mix it in well. Dump the batch into portable tanks and allow to age for three days. Shaving preparations of this type require a certain amount of skill and experience in their manufacture and I would suggest that you give them temperature and shelf tests before attempting to market them.

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READERS'

NICOTINE STAIN REMOVER: I should like a formula for a product to remove nicotine stains from the fingers. I have seen products of this type but they look more like mixtures of various solvents. What I want is something more in the cosmetic line that could be packaged attractively and have more of a sales appeal. Perhaps you have a cream or something like it that I could use. New York.

The following formula will probably meet your requirements for an efficient nicotine remover:

Beeswax	10.0
Paraffin	5.0
Mineral oil	46.0
Pumice	8.0
Borax	0.5
Water	30.0
Perfume	0.5

OVERFLOW SALVAGE: We have at all times, from our filling machine, an overflow of mineral oil and ethyl acetate which goes into the same container, at times there might be some alcohol in same. Up to now we have not used any of this except when the jug was cleaned and then we could salvage the acetate for polish remover, however, of late we have had to change over from one to the other and have had no time to take care of cleaning the jug. Can you suggest any product that this can be used for except polish remover? Any suggestion will be appreciated. Rochester.

The only thing I can think of at the moment in which such a mixture might be useful, is in the manufacture of an abrasive polish or cleaner for metal. The addition of a suitable abrasive such as silica or the like would probably provide a useful product.

HAIR BLEACH: I am taking this opportunity to make the following inquiry asking you to forward it to the proper department. I am interested in a good hair bleach and would appreciate receiving one or two reliable formulas that can be used safely on the face as well as on the arms and legs. Lawrence.

Ready-made formulas for bleaching the hair have not, to my knowledge been made available and most cosmeticians still rely upon peroxide-ammonia mixtures. Various combinations have been suggested to achieve the desired bleaching action. One standard procedure requires that the hair be washed thoroughly with soap and water and carefully dried. Using absorbent cotton or a brush, a mixture of 20 parts of 17 volume hydrogen peroxide and one part of stronger ammonia water is applied to the hair. In some cases this may prove too strong and a more dilute solution such as one consisting of 30 parts of peroxide and one part ammonia, may be employed. Bleaching generally takes place in a few minutes, depending upon the amount of hair being treated and its location on the body. Of course, the question of safety on more delicate areas like the face must be taken into consideration and probably even less powerful solutions should be used. Obviously, these mixtures are not particularly stable and should be prepared just prior to application. It might be an idea to dispense a two-bottle combination.

QUESTIONS

NON-ALCOHOLIC MOUTH WASH: I am interested in making up a non-alcoholic antiseptic mouth wash. I have experimented with various antiseptics. Perhaps you could advise me on a typical formula. I would also appreciate your giving me the per cent of formaldehyde, which could be incorporated, and still be antiseptic. Baltimore.

Several alcohol free formulas for mouth washes and gargles are published in the "Pharmaceutical Recipe Book" as well as other sources. From the former source, is taken the following astringent gargle which contains phenol as an antiseptic:

Tannic acid	**12.0 Gm.**
Glycerine	**60.0 cc.**
Liquefied phenol	**11.0 cc.**
Distilled water, to make	**1000.0 cc.**

For use, this gargle is diluted with an equal volume of water. From another source, there is available the formula for another easily prepared mouth wash, consisting of:

Sodium borate	**4.0**
Sodium chloride	**4.0**
Sodium bicarbonate	**4.0**
Tincture of cudbear	**2.0**
Peppermint water, to make	**250.0**

Dissolve and filter. Mix two tablespoons with ¼ glass of water. Formaldehyde is seldom if ever used in mouth washes. I cannot recommend its employment for such purposes.

CREAM LOTION HAIR DRESSING: Can you give me information concerning the formulation of a hair dressing of the cream lotion type? Any information will be appreciated. Grand Rapids.

A dressing of the cream lotion type can be prepared as follows:

Diglycol stearate	**10.0 parts**
Castor oil	**20.0 "**
Almond oil	**20.0 "**
Water	**70.0 "**
Perfume	**sufficient**
Preservative	**sufficient**

This can be further diluted with water to make a product of the desired consistency.

NON-ALCOHOLIC HAIR TONIC WITH LANOLIN: Can you suggest a formula for a non-alcoholic lanolin-mineral oil type hair tonic? Richmond.

An article on the preparation of mens hair grooms was published in the July 1944 issue of DRUG AND COSMETIC INDUSTRY. In it was given considerable information on the manufacture of various types of hair tonics and the like. At this time it was pointed out that at least one leading hair tonic is based upon a liquid water-in-oil emulsion. Such a preparation was made with lanolin, cholesterol and oxycholesterol, and by emulsification of the ingredients the need for alcohol was eliminated. I would recommend that you take these suggestions as a basis for further experiment in the development of your own product.

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READERS'

COCONUT OIL SHAMPOO: As a subscriber to your magazine, I would appreciate receiving more information about manufacturing a coconut oil shampoo that produces a rich lather. I have tried combinations of pure coconut oil, potassium hydroxide and water. None has produced a good lather and one batch separated on cooling. Montreal.

The manufacture of a coconut oil shampoo requires more than the mere combination of coconut oil with a saponifying agent. To illustrate how such products are made, I am including the following method for making a coconut oil shampoo by the hot process, as described in Chilson's textbook on cosmetic manufacture:

Coconut oil	**10.0 per cent.**
Potassium hydroxide 85%	**5.38 " "**
Sodium hydroxide 95%	**0.5 " "**
Glycerine	**12.65 " "**
Oleic acid	**14.0 " "**
Water	**56.72 " "**
Perfume	**0.75 " "**

Dissolve the potassium hydroxide in one-third of the water. Melt the coconut oil and add the alkali solution in a thin stream with continuous stirring until saponified. Allow the coconut soap to become cold, stand overnight, before proceeding with the batch. Mix the glycerine with half of the remaining water and bring to a boil; then add the coconut soap in small portions, and stir until dissolved. Dissolve the sodium hydroxide in the rest of the water and add to the soap solution immediately after the coconut soap has dissolved. Add the oleic acid and stir slowly until completely saponified, then perfume. Age, chill to 32° F. and filter.

CORN REMOVER: For many years I have been using a corn remover and it strikes me that such a product should be easy to prepare as an addition to my own line. Can you give me any information about the formulation of corn removers, preferably something that is not too complicated and can be made from materials that are available? Jersey City.

Collodions are undoubtedly the most widely used corn preparations and many formulas are available for making them. In the main, however, they are minor modifications of simple salicylic acid-flexible collodion solutions, such as the salicylic collodion of the "National Formulary." This consists of:

Salicylic acid	**10 Gm.**
Flexible Collodion, to make	**100 cc.**

A simple and frequently recommended modification of this preparation is as follows:

Salicylic acid	**10 parts**
Lactic acid	**10 "**
Flexible collodion	**100 "**

Such products are painted on the corn once or twice a day for several days, followed by soaking in hot water, after which the corn is readily removed.

QUESTIONS

TOOTHACHE DROPS: I have been told that toothache drops can be prepared from simple mixtures of certain essential oils. I know that clove oil has been used for this purpose. Can you give me any further information on such a product? New York.

Many essential oils relieve toothache if placed in the cavity. Oil of cloves is undoubtedly the most popular but oil of cajuput has often been recommended. One toothache remedy based chiefly on essential oils is made from:

Camphor	**2.0 parts**
Clove oil	**2.0 "**
Cajuput oil	**2.0 "**
Peppermint oil	**1.0 "**
Menthol	**1.0 "**
Hops oil	**2.0 "**
Alcohol	**15.0 "**
Ether	**10.0 "**

REFERENCES ON COSMETICS: I am thinking of going into the production of cosmetics, but before I do I should like to read up on the subject and familiarize myself with the background and methods. I would, therefore, greatly appreciate information as to what books are available on the subject, and where they may be obtained. Pontiac.

For background and history, I would recommend "Truth About Cosmetics" by E. G. McDonough. Chilson's "Modern Cosmetics," Second Edition, is an excellent text on formulation, while De Navarre's "Chemistry and Manufacture of Cosmetics," is a good source of theoretical and technical material. Another well-rounded reference source of British origin is "Modern Cosmeticology," by R. G. Harry. Poucher's set of three books, "Perfumes, Cosmetics and Soaps" provides a dictionary of raw materials, a formulary on perfume compounding and a formulary on cosmetic preparation. Unfortunately, this last is no longer available in the United States, and will not be purchasable until after the war. Goodman's "Cosmetic Dermatology" is really a fine source of both formulation and the dermatological aspects of cosmetics. Bennett's "Cosmetic Formulary," presents many formulas with but little technical discussion, but describes products not found in other sources. Of course, current developments in the field of cosmetics are recorded regularly in our own monthly publication.

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20—New Stainless Steel Tanks—60-1000 gallons capacity. 10—Copper Tanks 50 to 3000 gallon capacities. 4—Single Punch Tablet Presses. 2—Jewel 250 G.P.H. Water Stills. 10—Portable Agitators All New. 1—Four Head Piston Filler. 3—Shriver Presses Wood Plates and Frames 12"-18"-24". 1—Stokes Water Still No. 1A—5 G.P.H. Also: New Brass Pumps—Gravity Conveyors In Stock. Write For Latest Stock List. PERRY EQUIPMENT & SUPPLY COMPANY, 1515 W. THOMPSON STREET, Phila., 21, Penna.

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WANTED: YOUR SURPLUS EQUIPMENT. Single items such as Filters, Fillers, Tablet Machines, Kettles, Mixers, etc. or complete plants for liquidation. Your inquiries solicited. BRILL EQUIPMENT COMPANY, 225 West 34th Street, New York 1, N. Y.

TABLET Compression Machinery Colton or Stokes —any type. Spot Cash. Write Box 711, Bayard Adv. 401 Broadway, New York 13, N. Y.

WANTED: 1 Colloid Mill, 5 to 20 Gallons Capacity (stainless steel); 1 Monel Metal Percolator, 60 Gallons Capacity; 1 Horizontal Filter, Capacity 60-400 G.P.H. (sparkler preferred). No dealers. Write Box 675, DRUG & COSMETIC INDUSTRY.

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ANALYTICAL DEVELOPMENT CHEMIST. Large midwestern pharmaceutical company has immediate opening for man to take charge of development of analytical procedures for new pharmaceutical products. Applicant must comply with W.M.C. regulations. Box 664, DRUG & COSMETIC INDUSTRY.

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SALESMAN WANTED FOR CALIFORNIA. EXCELLENT OPENING FOR HIGH GRADE SALESMAN WITH FIRST CLASS KNOWLEDGE OF PERFUME BASES AND ESSENTIAL OILS. WRITE FULL PARTICULARS TO Box 694, DRUG & COSMETIC INDUSTRY.

Help Wanted

ANALYTICAL CHEMIST, Pharmaceutical Control Laboratory. Recent graduate with bachelors degree in Chemistry preferred: Analysis base materials and finished medicinals. Please submit full details, education, experience, salary expectation, draft status, small photograph. Box 679, DRUG & COSMETIC INDUSTRY.

PROMINENT COSMETIC HOUSE has an opening for a superior salesman well acquainted with department store trade. Box 698, DRUG & COSMETIC INDUSTRY.

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SALES MANAGER with successful record, good personal contacts with cosmetic buyers, wanted by well-established, rapid growing cosmetic enterprise. Box 705, DRUG & COSMETIC INDUSTRY.

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EXPERIENCED PERFUMER in essential oil field desires position as consultant with essential oil house. Can develop large line of high grade perfume compounds and specialties. Box 704, DRUG & COSMETIC INDUSTRY.

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PUERTO RICO SALESMAN: Well connected with pharmaceutical, department and syndicate stores, desires to handle as distributor in Puerto Rico nationally advertised perfumes, cosmetics and pharmaceuticals. Age 47, married, 4-A. Box 701, DRUG & COSMETIC INDUSTRY.

ADVICE ON TOILETRIES MANUFACTURE: Creams, Lotions, Dentifrices, Hair and Shaving Preparations, etc. "Pharmaceutical Consultant," 19 Valley Road, White Plains, N. Y.

YOUR CONFIDENTIAL CORRESPONDENCE INVITED. Wanted Product or business opportunity, post-war. Concern with substantial assets, presently engaged in war work, interested in potential post-war items for development and research . . . preparatory to post-war manufacture. Give full particulars first letter. Will treat confidentially. Box 702, DRUG & COSMETIC INDUSTRY.

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